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Andrews University

School of Education

**THE REFLECTIVE PROCESS IN NURSING CLINICALS USING
JOURNALING AND DIALOGUE**

A Dissertation

Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

by

Rita Van Horn

September 1999

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A dissertation
presented in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

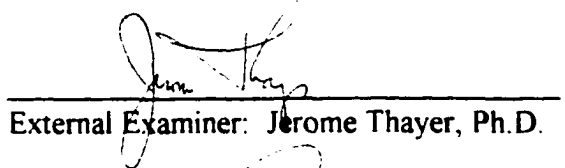
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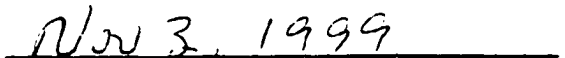
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ABSTRACT

**THE REFLECTIVE PROCESS IN NURSING CLINICALS
USING JOURNALING AND DIALOGUE**

by

Rita Van Horn

Chair: Shirley Freed

ABSTRACT OF GRADUATE STUDENT RESEARCH

Dissertation

Andrews University

School of Education

**Title: THE REFLECTIVE PROCESS IN NURSING CLINICALS USING
JOURNALING AND DIALOGUE**

Name of researcher: Rita Van Horn

Name and degree of faculty chair: Shirley Freed, Ph.D.

Date completed: September 1999

Problem

Nursing educators face the challenge of developing strategies that will help students to solve problems, to think critically, to make safe clinical decisions, and to interact as a team member in the clinical setting. The purpose of this dissertation is to describe students' clinical reflection processes as they problem solve while working individually and in pairs while caring for patients.

Method

Two case studies describe the experiences of (1) 17 students who worked individually in the hospital clinical setting and who answered specific questions about

problem solving in a written journal and (2) 20 students who were paired in the clinical setting and who answered the same questions together in a journal shared by the pair. In both case studies the experience was 9 weeks. The written journal questions were designed around a problem-solving process and thoughts and feelings about the clinical experience. A rubric adapted from Boud, Koegh, and Walker's (1985) reflective model was used to analyze the journal responses. Other sources of data included observations, interviews, and reflections by the investigator.

Results

A problem-solving process was documented in reflective journals in both cases. However, the presence of reflection in the paired experience was significantly higher than levels of reflection of students functioning as individuals in their clinical experience. Themes emerging from the journals demonstrate that dialogue effectively reduced anxiety and increased perception of learning. Journal writing both individually and in pairs does assist students to link theoretical knowledge with experience, and though reflection has traditionally been considered an individual process, this study indicates that benefits in reflecting together in a journaling process appear to be greater.

Conclusion

The cross-case analysis reveals there are connections between dialogue within journaling and problem solving, reflection, and critical thinking. This study suggests that the clinical environment can be organized by pairing students and having them reflect in journals to increase learning and critical thinking.

Dedicated to:

My mother and father for the love and support they have given me through this process

Lenora Follett and Karol McDonald who gave me technical support

Shirley Freed for mentoring me through the changing landscapes of this dissertation

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CHAPTER 1

COMING TO THE QUESTION

Introduction

The student was shaking and almost completely white. *I am so frightened. What if I do something wrong? Will I make it through the shift? Are these feelings normal? Will I fail because I cannot get my feelings under control? Do others feel the same way I do?*¹

I wished I could share with her one of the first times I felt the terror of a new situation. I was a student in the 3rd year of nursing, and the nurse with whom I was working had to go to a meeting. I was alone in intensive care with a very sick child. There was a registered nurse (RN) in the next room whom I could call for if I needed help, but it is not the same as the RN standing beside me.

“Dear child, do not stop breathing!” I whispered. “I really do not know what to do.” My face felt hot and my mouth felt dry. “Yes, the nurse has confidence in my ability to watch you, but why do I feel this way? Should I admit my feelings? Would I fail this course?” I took a deep breath and watched the ventilator methodically deliver breaths of air. The child was slowly turning from a pale color to a pink color. “Lord, help me get through this experience.”

¹Italics indicates student comments—see chapter 3 for rationale.

The student said, *I did not learn anything last quarter. Class was so boring.*

I had high expectations of learning to teach nursing. But I, too, remembered the boring classes. Often, the teachers read directly from our textbooks. After 20 minutes I lost interest even though the teacher asked questions, moved about in the room, and even varied her voice. Was this the way I wanted to teach? Are there other methods I could learn to utilize so that my teaching would come alive?

The student said, *I have learned more this quarter than I ever have. You really made me think. Learning was so much fun. I loved the group work. I wish every class was like this.*

Cooperative learning, what is this? Do you mean students can learn from each other? What do you mean the teacher is not the focus in the classroom, the students are? I do not need to know all the answers! I find students can actually participate in knowing the answers. Accountability, responsibility, positive interdependence—learning together in a group can be fun. Teaching has come alive again. If I can start slowly and gradually build in order to help others to learn to teach this way, what an “awe-inspiring” experience this will be!

The preceding written statements are dialogues from students whom I have taught in the past 6 years. I have included my thoughts. These experiences have spurred me to study pedagogical methods that will enrich the students’ experiences so they can achieve their goals of being professional nurses.

In this chapter I discuss issues related to nursing, to nursing education, and,

more specifically, to clinical education. The purpose of this dissertation and the guiding questions of this study are discussed.

Issues in Nursing

Society is rapidly changing and so are the expectations of the health care system. According to Heaslip (1996): "The health care system is experiencing demands from the public for increased access to nursing and medical care within the constraints of limited financial, physical and personnel resources" (p. 3). It is common for a new graduate to care for clients with multiple medical diagnoses and multiple pieces of technical equipment connected to these patients. Not only is the new graduate to care for many clients, but he or she is to coordinate the care with multiple health personnel as well as to work with less technical personnel such as nurse aides and medical assistants. A registered nurse must have the skills of teamwork, critical thinking, and problem solving as well as self-confidence, flexibility, and innovation (Walton, 1996) while working in this complex changing world of the practical setting. Health care, including hospital administration, is demanding nurses to possess all of these skills.

So where do nurses learn to be flexible and confident? How do they become critical thinkers and team members? It starts with education and the resourceful ways we teach students to interact and think critically in the clinical setting.

Issues in Nursing Education

Education for the clinical setting starts in the classroom. Unfortunately, according

to Pitts (1985), “nursing knowledge is transmitted via passive learning with standards of professional instruction and supervised practice” (p. 37). As a result, nursing education has often been inadequate in preparing students to develop clinical decision-making skills and to become critical thinkers (Jenks, 1992). The sixth objective of the National Education Goal 5 emphasizes that, by the year 2000, “the proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems will increase substantially” (National Educational Goals Panel, 1994, p. 10). Nursing education recognizes the need to teach critical thinking, and decision-making and problem-solving techniques to students. The National League for Nursing (NLN), the accrediting body for B.S./A.S. nursing schools, has mandated that nursing schools establish outcome criteria for critical thinking as a part of the curriculum (National League for Nursing Association Commission, 1997).

According to Walton (1996): “Old assumptions and methods of educating nursing students must be examined in the light of changing expectations and health care delivery systems” (p. 400). Nursing education needs to find new avenues of approach that will include the use of the increasing amount of knowledge needed to be applied to the curriculum content (Heaslip, 1996).

One of the strategies that may promote critical thinking is cooperative learning. Nurse educators recognize the merits of using cooperative learning to teach nursing content (Boltz, Boltz, & Glenn, 1993; Glendon & Ulrich, 1992), but the research in cooperative learning in nursing is sparse. Ashley and O’Neil (1994) show that nursing students (high risk) who studied cooperatively achieved higher scores on state boards than

a control group that had no interventions. Other research has shown an increase in students' knowledge (Hiebert, 1996; Houston, 1990), and an increase in key cognitive activity (Higgins, 1991), an increase in peer socialization and in positive attitudes toward learning (Beck, 1992) as a result of using cooperative learning in the classroom.

As a nursing educator I have used cooperative learning in my classroom. I believe it facilitates problem solving and critical thinking. At first it was a challenging strategy for me to use. Coming from a traditional background, giving up "control" of the knowledge to adopt a collaborative role was new and different for me. After all, I was the imparter of all knowledge, or so I thought. The Johnson, Johnson, and Smith (1998) model taught me the importance of establishing an environment that promotes exchange between the student and the teacher and the student and other students. Gradually, the comments from my classroom changed from *this is boring* to *I really learned a lot from this class. You really made me think*. Because of these comments I was driven to continue the search for methods that will help nursing students expand their thinking in applying nursing theory to clinical settings.

Issues in Clinical Education

The goal of undergraduate nursing programs is to develop "an autonomous, accountable practitioner who has not only the practical skills necessary to deliver high quality nursing care, but also the broad knowledge base and analytical ability to make informed decisions about care" (Jinks, 1991, p. 127). Student nurses spend two-thirds of their hours of nursing education in the clinical setting, and yet it is "the least understood of

all nursing education activities” (Infante, 1981, p. 16). Tanner and Lindeman (1987)

identified six of the top research priorities related to clinical teaching:

1. What method of instruction best develops clinical problem-solving skills at baccalaureate and master’s levels?
2. What is the most effective approach to teaching clinical nursing skills?
3. What clinical teaching strategies are more conducive to the development of professional qualities: e.g., critical thinking, accountability, change agent?
4. What types of clinical performance evaluation strategies are most reliable and valid?
5. What factors enhance the transfer of didactic learning into clinical practice?
6. What factors in clinical experience (e.g., number of hours, rotations, faculty/student ratios) are associated with the level of performance at graduation? (p. 56)

A recent review of literature indicates the concerns regarding clinical teaching are still there. Krichbaum (1994) states:

Professional nursing education is costly, time-consuming, and inundated with methods passed from generation to generation of nursing faculty as practical wisdom about effectiveness in clinical teaching. Few aspects of clinical teaching have been investigated empirically, let alone validated. (p. 314)

Clinical education is a complex activity. The clinical experience is often unpredictable and difficult to control. The nurse-educator not only needs to ensure that the nursing student acquires knowledge and problem-solving ability, but needs to protect the patient from harm by ensuring that the student practices safe care. As a clinical educator, I guide the students through the complex and ever-changing situations of the clinical experience so they can analyze and synthesize information learned in the classroom and connect it to the practical situations they face.

The challenge of teaching nursing students in the clinical setting made me wonder if pairing students as they care for the patients would have the same benefits as pairing

students in the classroom setting. Some of the classroom benefits include increasing problem-solving skills, critical-thinking skills, self-confidence, communication, and social interaction (Johnson, Johnson, & Holubec, 1994; Sharan & Sharan, 1990).

In reviewing literature on cooperative learning in the nursing clinical setting, I did not find the term *cooperative learning*. The closest terms are *collaboration*, *teamwork*, *dual* (two students at the same level working together on one patient; instructor has given a clear specific task for each student to perform), *multiple* or *shared assignments* (two students at the same level working together on one patient) and *reciprocal learning* (students on the same level evaluating each other's skills). Baird, Bopp, Schofer, Langenberg, and Matheis-Kraft (1994) found that in a collaborative activity between a student and an RN mentor there was an increase in self-confidence and a decrease in anxiety. Warner, Ford-Gilboe, Laforet-Fliesser, Olson, and Ward-Griffin (1994) concluded that a shared assignment in a community experience offered students the opportunity to learn about collaboration in the clinical setting. Two articles advocate the use of dual assignments (Fugate & Rebesch, 1992; Gotschall & Thompson, 1990) as a way to increase faculty quality time with the student and to increase problem-solving skills.

My Pilot Study

Because very little research has been done on the benefits of cooperative learning in the clinical setting, I conducted a pilot study to investigate the feasibility of pairing students in the clinical setting. I used qualitative research processes because they allowed

me “to focus on identifying, documenting, and knowing (by interpretation) the world views, values, meanings, beliefs, thoughts, and general characteristics of life events, situations, ceremonies, and specific phenomena under investigation” (Leininger, 1985, p. 5). I wanted the students’ viewpoint on their experience which can best be studied by using this method. In the pilot study I formed two pairs, and the paired students reflected on their experiences through the use of journaling. They also shared their experiences with me during two interviews during the quarter. The themes that emerged seemed consistent with previous research on cooperative learning.

The first themes—psychological health, self-esteem and self-confidence—emerged in statements such as:

Working together increased my self-confidence; it made the experience not only fun but also kept the stress level down, which I believe will help us become better nurses (Journals of D. R., p. 1; P. K., p. 11).

Davis (1995) indicated that anxiety associated with the learning environment was reduced through peer support and cooperation.

A second powerful theme that emerged was the use of thinking skills.

We learned from each other. We found in working together we could challenge each other to think and to work toward improving our skills (Journals of M. P., p. 8; S. D., p. 9). Because the decisions nurses make affect people’s lives, developing critical thinking is the most important and challenging goal a nursing student can accomplish (Alfaro-Lefevre, 1995).

The third theme that emerged was positive relationships and attitudes. The following statements made by the students illustrate this:

I appreciated input from my partner. We could talk things over. I missed my partner when she was sick. There was no one else to share the new experiences with. As we worked together, we discovered that our communication skills increased. We were able to organize ourselves better and get things done. Clinicals were fun to do

(Journals P. K., p. 3; S. D., p. 7). Johnson et al. (1998) have shown that cooperative learning brings about more positive attitudes toward material studied, class instruction, and personal relationships.

While observing the students working together, I found it was quite common for them to be side-by-side discussing how they could prioritize their time and how they could share activities. I also observed eagerness when coming to clinical labs and the regret to go home. They enjoyed learning together.

Because of the pilot study, I was able to set up certain guidelines for using cooperative pairs in the clinical setting, but I did not want to stop there. I agreed with Batson (1997) who said, "to function well in a society of rapid social and technological change, schools need to become teaching-learning communities through which not only the children but also teachers, parents and administrators learn and grow" (p. vii). I had allowed experience to be the teacher of knowledge, but I was still faced with the challenge of continuing to develop strategies that would help students solve problems, make safe clinical decisions, interact as a team member in the clinical setting, and in the process bridge the gap between theory and practice. This led to the purpose of my study.

Purpose

The purpose of this dissertation is to describe students' clinical reflective processes as they problem solve while working individually and in pairs caring for patients. The secondary purpose is to describe my experience as I initiated journal writing individually and in pairs while students worked in the clinical setting.

The Questions

The primary question is: How can clinicals be organized so students link theory to practice? Because this question can have multiple answers, I chose two related major questions for this case study research:

1. How does the journaling process influence reflection on problem solving in the clinical setting?
2. How can the clinical experience be evaluated for the presence of reflective processes?

The Posture of the Researcher

By including my experience with the experiences of the students in this research study, it allows me to bring understanding of "how the environment acts on itself as well as how the inquirer [me] causes it to behave in different ways" (Guba & Lincoln, 1981, p. 129). I bring my knowledge and my way of knowing in describing and interpreting the phenomenon as it is presented. Lastly, by including my experience, the process of being the tool of the inquiry provides an opportunity "to explore new areas of knowledge and to

gain a fresh perspective about traditional and new views of the nature of nursing” (Leininger, 1985, p. 22).

Because the experience is mine, I am explaining, describing, and interpreting the information as I view it. Because the knowledge I have gained through reflection, observation, and interaction with the students is a part of this experience, I believe using the first-person voice is the best way to communicate to readers the results of this research study.

Definition of Terms

The following are definitions of terms as they will be used throughout this study:

Critical Thinking: “Reasonable reflective thinking that is focused on deciding what to believe or do” (Baker, 1996, p. 19). “Critical thinking is thinking about your thinking while you are thinking in order to make your thinking better” (Paul, 1993, p. 91).

Clinical Experience: An experiential activity whereby nursing students learn to care for a patient in the hospital setting.

Decision Making: The formulation of a hypothesis based on combined facts from appropriate knowledge bases and from the selection of nursing interventions that best meets the needs of the patient. It includes the thoughts that preceded the choice of the intervention.

Journal Writing: To express personal thoughts in written form, guided by specific questions related to problem solving and thinking.

Nursing Process: “A systematic, rational method of planning and providing individualized nursing care. Its purpose is to identify a client’s health status, actual or potential health care problems or needs; and to deliver specific nursing interventions to meet those needs” (Kozier, Erb, Blais, & Wilkinson, 1995, p. 83). The nursing process is an adaptation of problem-solving techniques.

Reflection: “An important human activity in which people recapture their experience, think about it, mull it over, and evaluate it” (Boud, Keogh, & Walker, 1985, p.19).

Problem Solving: “The process used to resolve or answer a proposed question or achieve an answer to a client’s need” (Klaassens, 1992, p. 29). It involves defining the problem, gathering information, analyzing the information, developing solutions, making a decision, implementing the decision, and evaluating the solutions.

Summary

Nursing students spend two thirds of their educational time in the clinical setting working directly with patients. Nurse educators realize that in this complex setting, they need to develop strategies to maximize student learning while ensuring patient safety. Because there is very little research on strategies that promote problem solving, teamwork, and reflection (critical thinking) in the clinical setting, this study describes tools developed to promote and evaluate the outcomes of the clinical experience. The following chapters describe the clinical experience where journaling was incorporated into the clinical requirements.

CHAPTER 2

ENTERING THE DIALOGUE

Introduction

Clinical conference started at 2:30 p.m. It is the nursing students' first day with me at the hospital. I can feel the tension in the room. They are nervous. They are wondering what this experience is going to be like. For them the questions are: *Will I make it through tonight? What is this teacher like? Will she be kind to us or will she intimidate me? Why cannot I remember the drugs that I looked up last night? and Will I make a mistake?* For me the questions are: "Will these students conduct safe care tonight?" "How will they react to my questions and my advice for improvement?" and "Will they stop to think before they act?" These are questions unheard by each other but ever present in the minds of the students and teachers as they start a clinical experience together.

As the students leave the conference room to start their work, I am organizing myself for the evening. I have done clinicals many times, but I wonder how I can do it better. I know I must incorporate methods that will help the students to solve problems, think critically, and work with patients and staff in a team effort. But what strategies are the most effective? What strategies do other nursing educators use to help their students

link theory to practice? I am using cooperative learning in the classroom and wonder if it will work in the clinical setting. I wonder what others are saying about the clinical experience. The following is a search of the literature for problem solving using journaling, reflection, and cooperative learning. In ERIC, there are 2,601 citations for critical thinking, for reflection 1,100, for cooperative learning 2,182, for problem solving 5,357. To narrow the search further, I used Cumulative Index to Nursing and Allied Health Literature (CINAHL). The results are critical thinking and nursing 520, reflection and nursing 455, journaling and nursing 15, cooperative learning and nursing 30, reflection, nursing, and critical thinking 32, cooperative learning and clinical nursing 2, cooperative learning, reflection, journaling, and nursing 0. After reviewing the abstracts, I chose the articles that seemed to be appropriate to the purpose of the research. I then read the articles and identified the authorities that were mentioned numerous times. The discussion of the various dialogues will be primarily from nursing and include clinical teaching, critical thinking, journal writing, reflection, and cooperative learning.

Clinical Teaching

Clinical learning activities are the “heart” of nursing programs. They are what shape the student into the professional nurse. Students spend two-thirds of their time in nursing in clinical practice. It is crucial that nursing educators understand this activity.

Yet, according to Infante (1981):

clinical learning is the least studied of all nursing education activities. Many aspects of clinical learning are taken for granted, and many are rooted in traditionalism or ‘the way it is always done’. Thus there is ample room for improvement—a variety of

strategies can be tested in attempts to use the clinical laboratory in nursing education to achieve learning outcomes. (p. 16)

Studies regarding clinical learning are often about the student's perception of what characteristics make a good clinical teacher (Benor & Leviyof, 1997; Flager, Loper-Powers, & Spitzer, 1988). Benor and Leviyof (1997) found that the students would like effective teachers to exhibit the following characteristics: (1) competency; (2) fair evaluation processes; (3) good instructional skills; (4) good interpersonal relationship; and (5) good personality. This list is in order of importance to the student.

The second area of study is the structure of clinical time. Using an experimental design, Infante, Forbes, Houldin, and Naylor (1989) studied the effects of synchronization of clinical laboratory experiences with instruction in nursing theory and science and collaboration of faculty, students, and nurse practitioners. Findings indicate that students in the experimental group achieved higher scores on the Mosby Assess Test (a comprehensive examination for medical-surgical nursing), college laboratory practicum scores, and grade point averages.

Graham (1995) studied the relationship between critical thinking and how time is structured in the clinical setting. There were three groups: a control group (sophomore nursing students), a group (junior-level nursing) who spent 5 hours a day for two days in the clinical setting, and a group (junior-level nursing) who spent 2 hours on 1 day and 8 hours the next day in the clinical setting. The Watson-Glaser Critical Thinking Appraisal (WGCTA) form A and form B was used to assess critical thinking. WGCTA form A was administered to all three groups at the beginning of the semester and form B

was administered at the end of the semester. There were significant differences in the groups with the comparison group scoring the lowest and the 2-hour/8-hour group scoring the highest. Even though the conclusion was that structuring time in the clinical setting makes a difference in critical-thinking scores, it is not clear as to what was happening in the control group or the effect of using students at different levels—sophomore and junior.

Problem Solving

The student stated, *The blood pressure of this patient is 200/150. I rechecked the blood pressure on the opposite arm and it was 180/150. I checked the medication record and there is no order for antihypertensive medications and he has no history of hypertension. I told the nurse and she is calling the doctor.*

Problems! Students face them from the time they start their clinical day to the time they leave. They need to be able to use knowledge from what they have previously learned with the problem-solving process to come up with the best solutions. Part of clinical teaching is to assist students to solve problems safely and effectively.

Problem solving, decision making, and critical thinking are often used interchangeably. According to Klaassens (1992), “problem solving is the process used to resolve or answer a proposed question or achieve an answer to a client need” (p. 29). It involves defining the problem, gathering information, analyzing the information, developing solutions, making a decision, implementing the decision, and evaluating the solutions.

Why do college students have difficulty in problem solving? The answer may lie in the fact that students are not at a cognitive functioning level to effectively problem solve. Klaassens (1992) reports that “in spite of the fact that most college courses require formal reasoning ability, most students are functioning at a concrete level based on Piaget’s stages of cognitive growth. Estimates vary from 50-80% that some student populations are functioning at this lower level” (p. 29). According to Piaget’s stages of cognitive development, the adolescent transitions from concrete operations to formal operation. In formal operations the adolescent can think in more abstract terms. He or she solves problems by making hypotheses, testing the hypotheses, and drawing conclusions (Wong, 1997).

Taylor (1997) showed the difference between nursing students’ problem-solving abilities and the problem-solving abilities of a registered nurse (RN). The nursing students had difficulty in recognizing cues that are needed in caring for the patient and making sound decisions. The author suggested that

in order to improve novice problem-solving abilities in the clinical arena, real life situations should be used as the education vehicle. Problem-based learning as the framework for content delivery in undergraduate courses would address some of the defects identified by this study, and students should be introduced to the diagnostic reasoning process as a component of problem-based learning. (p. 336)

There are many models of problem solving that are discussed in the literature which are deemed helpful in promoting problem solving and critical thinking. One model is the Personally Perceived Problem Technique (PPPT) (Russaw, 1997). It is rooted in the inquiry-learning philosophy of John Dewey. There are four steps to the process: (1) exploration, (2) idea generation, (3) solution validation, and (4) evaluation. The tool is

helpful to students crystallizing questions about a clinical situation. Another model is the Paradigm of Problem Solving (Klaassens, 1992). There are five steps in this model: (1) scanning, data gathering, (2) formulating goals, (3) planning, (4) implementation, and (5) evaluation. This model allows the student to actively collaborate with the client to solve the problem. Two others are Hypothetic-Deductive Model (HDM) and Knowledge-Driven Problem-Solving Models (KDPS) (Cholowski & Chan, 1995). Cholowski and Chan advocate the use of KDPS because it allows students to bring old knowledge to new knowledge in the problem-solving process. Students are encouraged to “think aloud” and to use interactive dialogue with the expert nurse to help connect nursing knowledge to in order to problem solve.

All of the above models are types of problem-solving models; the differences lie in who assists the students to problem solve and with whom they are problem solving. The PPPT is primarily generated with the help of the teacher. The process involves the teacher questioning the student at each of the steps so that students identify their own learning needs. The Paradigm of Problem Solving is primarily assisting the student to learn to problem solve with the patient. The student and patient are collaborating together to solve the problem. Both HDM and KDPS are to assist the student in self-directed learning. The difference lies in HDM using a systematic approach and KDPS using the process of categorization. Knowledge content is interconnected by rational links, getting the student to connect hypothesized diagnoses with reorganized clinical data and rearranged knowledge structures.

Three strategies were mentioned in the literature that may assist problem-solving ability:

1. Concept mapping is used to assist students in organizing the data about their patient in preparation for caring for them (All & Havens, 1997).
2. In Patho-flow Diagraming (Reynolds, 1994), the teacher assists the student to use the nursing process and pathophysiology to diagram the concepts in relationship to the problems presented.
3. The use of the Taba teaching model, called concept formation, assists students to become active participants in the thinking process and not mere by-products of memorization. The teacher uses signs and symptoms of the patient for whom the student is caring. With the use of guided questions, the students categorize and hypothesize to come up with a solution (Malek, 1986).

All three strategies are taught during pre-conference or post-conference time. All three strategies involve identifying the concepts and assisting the students in relating characteristics that define the concepts. These processes assist the student in storing the information/knowledge when needed. Both Patho-flow diagraming and concept mapping provide a clearer understanding of the clinical situation through the use of visual representation. Patho-flow diagraming is sequential representation. Concept mapping is like a road map with connecting pathways. Taba uses dialogue between the teacher and students in the identification of the concepts.

Decision Making

After the students have spent time in pre-conference, the rest of the time is spent in actual patient care. Students are expected to apply knowledge from the classroom to the patient. They are confronted with decision-making opportunities related to nursing intervention. The faculty make rounds to assist students in problem solving as well as assessing their progress. The time the faculty spend with the student does seem to make a difference in clinical decision making. According to Wang and Blumber (1983), interaction between students and teacher falls into three equal levels: (1) 1 minute or less; (2) 1-6 minute; and (3) 20 minutes or less. The less time the faculty spends with the student, the more lower-level interactions occur. "The results of this study indicate that students' thinking abilities may not be encouraged by faculty due to the preponderance of low-level techniques, or that the students do not have necessary information for clinical decision making" (p. 149). The implication is that faculty need to spend more time with students and use higher-level interaction techniques. But is that possible with the numbers of students a clinical instructor usually is supervising?

In nursing, decision making is often interchangeable with problem solving, but they are different. "Solving a problem may require making a number of decisions and making a decision may involve solving a number of problems" (Kozier et al., 1995, p. 190).

There are many definitions of clinical decision making. Shamina (1991) defines clinical decision making as "command of the knowledge base related to the decision, and the ability to select and combine facts appropriately from this knowledge base" (p. 59). She examined the effects of systematically teaching decision analysis to students. The

results showed the nursing students were able to prioritize clinical interventions in accordance with clinical experts. They continued to do so after they had been taught this method.

Tsychikota (1993) “defined clinical decision making as the formulation of hypotheses and/or the selection of nursing interventions, and includes the thoughts that precede choice” (p. 389). In her study, the group that had internal locus of control verbalized more decision-making elements than those with external locus of control. Therefore, “the internal subject used significantly more of complex decision-making processes than did the external subjects” (p. 394). The researcher suggested

that learning [decision making] can be facilitated by using guided discussion and research in case studies that are composed of data sets of varying complexity and degree of ambiguity. In addition, nurse educators can help students learn how to make decisions under circumstances that closely reflect actual practice by sharing personal experience and expertise with them. (p. 396)

Jenks (1993) recognized that a complex activity like clinical decision making entails multiple patterns of knowing. She used a qualitative research methodology to gain a practice-based understanding of clinical decision making. She reported on personal ways of “knowing.” Personal ways of knowing included the patient, the doctors, and interpersonal relationship with staff. These affected nurses’ clinical decision making. Jenks concluded that “creating teaching methodologies that recognize the importance of the multiple patterns of knowing in clinical decision making could well result in more effective education for clinical practice” (p. 405).

Critical Thinking

In post-conference, I usually share the definition of critical thinking suggested by Paul (1993): “Critical thinking is thinking about your thinking while you are thinking in order to make your thinking better” (p. 91). It is the one definition that students seem to understand. It also corresponds with Rubenfield and Scheffer’s (1995) simple formula which helps student nurses to understand thinking and doing aspects of nursing so that they can reach their goal of “being a good nurse.” “The patient + you + thinking skills + content knowledge + nursing process (problem solving) = good nursing” (p. 39).

There does not seem to be agreement about the definition of critical thinking, but Facione (1984) states: “Whatever ‘critical thinking’ means, it simply cannot be allowed to mean anything a person wants, for at that abysmal level of individualistic relativism, communication breaks down entirely” (p. 255). Dewey (1933) describes the process of thinking:

Thinking enables us to direct our activities with foresight and to plan according to end-in-view, or purposes of which we are aware. It enables us to act in deliberate and intentional fashion to attain future objects or to come into command of what is now distant and lacking. By putting the consequences of different ways and lines of action before the mind, it enables us to know what we are about when we act. (p. 17)

The Foundation for Critical Thinking (1997) lists the following that would be helpful in teaching critical thinking.

1. Help students to better produce and assess intellectual work as well as act more “reasonably” and “effectively” in the world affairs and personal life.
2. Help students assess their work and action using intellectual standards essential to sound reasoning and personal and professional judgment.
3. Help students exercise more skilled and proficient reasoning and problem solving in a diversity of fields.

4. Help students think more clearly, more accurately, more precisely, more relevantly, more deeply, more broadly, and more logically.
5. Help students to become lifelong learners with more of the capacity to deal effectively with a world of accelerating change. (p. viii)

Critical Thinking in Nursing

The National League for Nursing (NLN) mandates that nursing programs be accountable in assessing critical thinking in nursing education. "The responsibility that nursing faculty feel for ensuring that entry level professionals can make sound professional judgments is grounded ultimately in a concern for health and welfare of the clients and the communities our graduates will serve" (Facione & Facione, 1996b, p. 42). "Nursing ultimately can enhance the quality of their practice by examining their thinking" (Colucciello, 1997, p. 237). Colucciello (1997) found there was a significant difference in critical thinking skills among students at different academic levels.

Critical Thinking in Clinicals

Critical thinking and professional judgment are often used interchangeably, and Facione and Facione (1996b) explains how they are related.

The scope of critical thinking in the context of professional judgment in nursing is remarkably broad. Focusing only on critical thinking in the context of clinical practice is too restrictive. It underestimates the rich range of professional responsibilities expected during management and supervision, peer leadership, public health education, collective bargaining, policy making or membership on boards regulating professional practice standards. (p. 42)

Heaslip (1996) advocates the use of reflection of the narrative notes that are written by students in nursing charts. Students who have the opportunity to reflect on their thought processes will become independent critical thinkers.

A process called “Critical Thinking Rounds” is used to practice dialogue with various levels of nurses and students to enhance critical thinking, decision making, and clinical judgment of students. Using 6 to 14 people at a time, these rounds can be conducted in a conference room or at the bedside of the patient (Schumacher, 1996). Research results were not available at the time of writing the article.

Alexander and Giguere (1996) paired undergraduate and graduate students together to facilitate the development of critical thinking and holistic-intervention competencies. They used a case study approach and concluded that it is a good teaching tool. Whiteside (1997) designed a model based on three dimensions of memory—semantic, episodic, and productive. Their results suggested that critical-thinking skills can be improved with the use of the model. Perciful and Nester (1996) used computer-assisted instruction throughout the clinical experience. The comparison group scored significantly higher than the control group on assessing, analyzing, and evaluating. They suggest that computer-assisted instruction can be used to promote critical thinking.

Reflection and Connecting Theory to Practice

Reflection is a complex process where feelings and thinking are closely linked. Broussard and Oberleitner (1997) define reflective thinking “as careful consideration and concentration regarding one’s own thinking” (p. 335). According to Boud et al. (1985), reflection is “an important human activity in which people recapture their experience, think about it, mull it over and evaluate it” (p. 19). Although experience alone does not always produce learning, reflection and experience together do seem to transform the learning

into knowledge. "Reflective education aims to help students take each client encounter as unique and constantly arrive at a new or revised interpretation of the meaning of an experience" (Wong, 1997, p. 447).

Schön (1991) argues that a reflective practicum can help form a bridge between the worlds of theory and practice. Although he talks mostly about professionals using reflection as a part of practice, reflection can assist students to learn about their own reality which would help them to link theory they are learning to clinical experience.

Journaling as Reflective Practice

I enjoyed my clinical experience. I feel that when I am at my clinicals that I learn the most about nursing. I did a nursing care plan the way the RNs do in the hospital. I also really enjoyed my time with my patient. I was nervous when I first greeted her. I was afraid I wouldn't be able to communicate well with her because of her shortness of breath, but it wasn't a problem. She let me glimpse a small part of her life and it was very pleasant (Journal 110, p. 5).

In the past 15 years, journal writing has become popular in nursing education. It is a strategy used to develop the practitioner of nursing. It is also believed that it will help bridge the gap between theory and practice and assist students to think critically.

Hahnemann (1986) advocates the use of journal writing. "We believe that journal writing has been a valuable tool that encourages clearer thinking and better learning. Our students are able to take theory and apply it in their practice. They have the ability to express their thoughts and feelings in writing" (p. 215).

Facione and Facione (1996a) recognize that journal writing is a valuable source to of evidence of critical thinking in students.

Self-reports can be a rich source of information about students' metacognitive reflection as well as their interpretations, evaluations, and analysis. Student journals structured around questions that call for reasons as well as opinions and explanation as well as description can provide qualitative self-report data. . . . They [journals] invite students to engage in some metacognitive reflection about their own thinking and provide some evidence of both their critical thinking skills, and their habits of mind. (pp. 50, 51)

Degazon and Lunney (1995) discuss the purpose of writing in relationship to the metacognitive process.

The ability to recognize, analyze and discuss thinking processes, i.e., metacognition develops as the writer focuses on thinking processes. Because metacognition is continuously useful as a tool for self-modification, development of this skill provides a basis for growth as a thinking professional. Discussions with, and writing for others expand the pool of viewpoints from which alternative decisions can be selected. The journal writer should recall one or more clinical situations as soon as possible after the clinical day. . . . Timeliness facilitates accuracy in recognizing, analyzing, evaluating and validating (or refuting) thinking processes that occur in relation to the situation (s). (pp. 271, 272)

The clinical setting is rich with thinking and problem-solving activities. Outside of post-conference there is very little opportunity for the student to discuss these experiences and try to integrate the knowledge and ideas into their own reality. "Thus, much of what occurs in practice remains unspoken and unheard. Journals are a means through which nurses can speak and listen to the voice of practice" (Holmes, 1997, p. 491).

There are various ways that journals can be used. According to Seschachari (1994), "the purpose of the instructor-mediated journal is threefold: to enable students to (1) overcome the fear of writing, (2) enhance their critical thinking, and (3) raise their level of discourse within the discipline, so that they merit higher scores in college-level

examinations” (p. 7). Journals can be used for comparing (looking for similarities and differences), summarizing reading or activities just performed, for observation, interpretation of data, criticizing and looking for assumptions, applying fact and principles to new situations, and decision making (Zacharias, 1991). Journal writing can be done as personal journals, dialogue journals, where the student and the teacher maintain a written dialogue throughout the course, class journals, and cooperative learning group journals in which group members share ideas with each other and the teacher (Jacobson, 1989; Reinertsen & Well, 1993; Tryssenaar, 1995). Landeen, Byrne, and Brown (1995) explored the use of journals in identifying important issues facing nursing students when learning in a psychiatric setting. Their conclusion was that the journal provided the student with an opportunity to be more self-reflective in his or her practice.

Journal writing does not come without problems. Paterson (1994) and Zacharias (1991) suggest that journals should have specific questions or guidelines for students to follow and a climate of trust. Abegglen and Conger (1997) used journaling as a tool for critical thinking in a community-health nursing course. They had to change their criteria so that students would reflect and apply community-health nursing concepts and principles to practice. For them, journaling is not just a mere retelling of the experience. At the end of the quarter they had the students give a self-assessment after they reread their journals. The students discovered for themselves how much learning and thinking had taken place.

Dialogue and Reflective Practice

Students engaged in active learning through dialogue retain information and develop cognitive skill (Gelula, 1997; Rossignol, 1997). Through the use of dialogue and

reflective practice the essence of nursing practice is facilitated when students and RNs share “therapeutic” practice together (Schumacher, 1996). Paul (1993) defines dialogical thinking:

Thinking that involves a dialogue or extended exchange between different points of view or frames of reference. Students learn best in dialogical situations, in circumstances in which they continually express their views to others and try to fit others’ view into their own. (p. 464)

Sedlak (1997) and Wong et al. (1997) discussed the following regarding their findings on dialogue and journal writing. To the researchers, dialogue is a form of reflective conversation. It was found that journal writing and dialogue complemented each other in facilitating student reflection. In the dialogues, the students could share their ideas among peers and gain further insight during the discourse. It was often observed that ideas discussed in dialogue sessions were incorporated in subsequent journal writing. Students expressed the view that the dialogues were stimulating and that they could be exposed to different dimensions in viewing the world.

Questioning

By using questioning, students learn to justify their position and to support their arguments through logic. Questioning facilitates critical thinking. It moves the student from passive learning to an active form of learning (Lambright, 1995; Schoeman, 1997). Questioning techniques such as teacher high-level questions and probing questions, elaboration of students’ ideas, and students’ participation may serve to encourage and focus student’s thinking in these critical cognitive activities (Rossignol, 1997). Questions

in written form help link prior knowledge with skill acquisition, decision making, and the release of feelings (Patton et al., 1997).

Cooperative Learning

Cooperative learning goes far back in history. According to Johnson et al. (1998), cooperative learning is as old as history. A quotation from Eccl 4:9-12 is used.

Two are better than one, because they have a good reward for toil. For if they fall, one will lift up his fellow, but woe to him who is alone when he falls and has not another to lift him up. . . . And though a man might prevail against one who is alone, two will withstand him. A threefold cord is not quickly broken. (p. 1:14)

Throughout history such people as Quintillion, in the first century, Seneca, a Roman philosopher, and Johanne Comenius (1592-1679) believed that students could teach each other and they could learn from each other. Cooperative learning came to the United States through the founding of the “Lancastrian school” in the 1800s. This was a model that dominated American education through the turn of the 20th century. John Dewey promoted cooperative learning as a part of instruction (Johnson et al., 1998).

The first research study on cooperative learning occurred in 1889. Since then there have been more than 600 experimental studies on cooperative learning that considered the competitive versus cooperative environment in the classroom (Johnson et al., 1994). The leading research groups in the field of cooperative learning in the classroom were led by Roger and David Johnson at the University of Minnesota and Robert Slavin at Johns Hopkins University. Their results indicated that cooperative learning increases academic achievement, critical thinking, self-confidence, and cooperative spirit (Gabbert, Johnson, & Johnson, 1987; Johnson et al., 1998; Slavin,

1988a, 1988b, 1989). Ellis and Fouts (1997) state: "Cooperative learning is one of the biggest, if not the biggest education innovation of our time. It has permeated all levels of teacher training from preservice to inservice" (p. 165). There continues to be studies at various levels of education as to the effect of cooperative learning on the individual student's achievement, thinking, and interpersonal relationships. Slavin (1989/1990) challenges educators to research how cooperative learning advances higher-order conceptual learning.

Cooperative Learning in Higher Education

College teaching has been changing. According to Johnson et al. (1998), faculty should think about the following principles:

1. Knowledge is constructed, discovered, transformed and extended by students.
2. Students actively construct their own knowledge.
3. Learning is a social enterprise in which students need to interact with the instructor and classmates.
4. Faculty effort is aimed at developing students' competencies and talents.
5. Education is a personal transaction among students and between the faculty and students as they work together.
6. Education is a personal transaction among students and between the faculty and students as they work together. (pp.1:9-11)

If faculty believe this, then learning should take place within a cooperative environment.

In their meta-analysis of the use of cooperative learning in college or adult settings, Johnson, Johnson, et al. (1998) found over 305 studies conducted since 1960 that compared cooperative learning with individualistic learning on individual achievement. Benefits and outcomes of cooperative learning included increase academic success, increase perception of greater social support and establishing better relationships, personal adjustment to college, and more positive attitudes towards the college experience.

Springer, Stanne, and Donovan's (1999) meta-analysis of science, mathematics, engineering, and technology also demonstrates, greater academic achievement, more favorable attitudes toward learning, and increased persistence when cooperative learning is used. In my search of the literature on cooperative learning in higher education the benefits of cooperative learning are academic achievement (Daley, Onwuegbuzie, Anthony, & Bailey, 1997; Gooden-Jones, 1996; Kim, Cohen, Booske, & Derry, 1998; Necessary & Whilhite, 1996; Pezeshki, 1998; Rupnow, 1996), decreased anxiety, increased motivation, change in attitudes (Fitzgerald, Hardin, & Hollingsead, 1997; Hazelbaker, 1997; Hill & Ross, 1996; McInerney, 1996; Stern, 1996; Watson, 1996), and greater amount of time discussing in groups (Doran & Klein, 1996; Wathen & Resnick, 1997).

Cooperative Learning in Nursing

Nursing recognizes the use of cooperative learning in the classroom as a strategy to promote critical thinking and problem solving. Students taught using problem solving and decision-making skills with the use of cooperative learning had a better self-perception of problem solving and decision making than did the students who were taught using lecture methods (Baumberger-Henry, 1998).

Abegglen and Conger (1997) write of their experience in a Community Health course where faculty tried to infuse critical thinking into the curriculum. The authors believe that nursing requires active learning. "If faculty expect students to think critically, then students must practice and faculty must role model, and one way to model critical thinking is through group discussion and problem solving" (p. 453). The small-group activities remained consistent throughout the year.

Beck (1995) reported that a “cooperative learning model can be an effective means of teaching nursing content” (p. 226). In Beck’s (1995) and Thompson and Sheckley’s (1997) study on cooperative learning in the classroom, the students commented that it was a positive experience and it increased their thinking.

Cooperative Learning in Clinicals

Cooperative learning as a term does not appear in the literature on clinical activities, but studies with the use of peer collaboration do appear. The primary purpose for using peer collaboration was to increase leadership skills, increase collaboration skills, and to enhance critical thinking. As the result of these experiences, students discovered that their peers were a good resource of knowledge and problem solving as well as enhancing each other’s technical skills (Bos, 1998; Ford-Gilboe, Laschinger, Laforet-Fliesser, Ward-Griffin, & Foran, 1997; Gerace & Sibilano, 1984).

Summary

I learn a lot from my partner. She and I can talk together regarding the problems that have arisen. I wish every teacher did this. Clinical experience presents many challenges to the students and it is important that clinical instructors understand how learning take place in the clinical setting. Research on clinical learning supports that good clinical teachers possess characteristics that are conducive to students learning, and that structured time in the clinical setting promotes learning and critical thinking. In order to assist students in the problem-solving process they face in the hospital setting, teachers

need to be aware of the cognitive level of students and use a variety of strategies that specifically assist them to build on their knowledge in the problem solving process.

My review of the literature shows that methods used to promote critical thinking and reflection in the clinical setting are dialogue, pairing students, computer-assisted learning and the use of journaling. The number studies in these areas, however, are small thus leading to the reason for studying the clinical setting which will be discussed in chapter 3.

CHAPTER 3

THE APPROACH TAKEN

Introduction

The purpose of this dissertation is to describe reflective processes when used by nursing students while working individually and in pairs. The secondary purpose is to describe my experience as I initiated journaling individually and in pairs while students were working in the clinical setting. This study is conducted to inform nurse educators about creative strategies that can be used to link theory and practice together and to improve problem-solving abilities, reflection (critical thinking), and team work.

This chapter presents the following: (1) reasons for using case study research as an appropriate methodology, (2) a description of the persons involved as a part of the context of the research, (3) a description of how the data were collected and analyzed, and (4) a discussion of the importance of being researcher, teacher and person sharing this experience as a part of learning about and understanding the phenomenon as it unfolds.

The Big Approach

In studying the clinical setting, it is difficult to separate one particular strategy that will assist students in functioning safely and in developing strong clinical problem-solving skills. There are many complex as well as confounding activities the students must learn

to surmount while learning to care for the patients. As an educator wanting to develop strategies for assisting nursing students learning in the clinical setting, I agree with Leininger's (1985) statement "that the goal of qualitative research is to document and interpret as fully as possible the totality of whatever is being studied in particular contexts from the people's possible viewpoint or frame of reference" (p. 5). Qualitative research aids in capturing the essence or nature of the students and their activities as they change over time.

There are many types of qualitative research, and I have chosen case study method to be used in this dissertation because it matches the purpose of the study. There is very little information in the literature that describes strategies useful in the clinical setting, particularly, strategies that promote multiple skills (i.e., problem solving, reflection, critical thinking, and teamwork) such as this dissertation intends to do. Thus, this dissertation fits the definition of case study by Stake (1985): "The study of a single case or bounded system, it observes naturalistically and interprets higher order interrelations within the observed data" (p. 277). And also Yin's (1994) definition of case study: "A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 13).

Because it is difficult to separate the many "variables" in studying a class in a real-life context (the clinical setting), case study is the most appropriate method to use. Merriam (1998) states, "A case-study design is employed to gain in-depth understanding of the situation and meaning for those involved" (p. 19). In this dissertation

understanding about the methods of journal writing and being paired will be gained by studying students in the clinical setting.

Context of the Study

The participants of both case studies were nursing students enrolled in a seven-credit, third quarter, Nursing III course. The course is offered through the Department of Nursing in a liberal arts college. The college offers an opportunity for a liberal arts education in a variety of programs in the arts and sciences and professional fields. The college recognizes the importance of critical thinking as stated in the mission statement. “Beyond giving information, the disciplines of the liberal arts create the environment for students to develop their abilities to think analytically, critically, and independently” (*College Bulletin*, 1996-1998, p. 12).

The Department of Nursing has three programs—a Licensed Vocational Nurse (LVN) to Registered Nurse (RN) program: an Associate of Science Degree (ADN) program, and a second-step Bachelor’s of Science in Nursing Degree program. The students in this study are enrolled in the Associate of Science Degree program. At the end of the program the students may take the National Council of Licensing Examination (NCLEX) for registered nurse licensure. The mission of the ADN program agrees with the college mission: “to create an environment that fosters critical thinking and instills a desire for ongoing inquiry” (*ADN Student’s Handbook*, 1998, p. 2). The philosophy of the Department of Nursing regarding education states,

Each student brings a unique life experience to the learning situation and has individual potential and goals. The educational system provides a variety of resources which include creative teaching and learning partnerships. These interactions enhance

the spirit of inquiry, encourage critical thinking and lead to acquisition of knowledge. (*ADN Student's Handbook*, 1998, p. 3)

The ADN program is accredited by the National League for Nursing (NLN) and as such meets their requirement for having critical thinking as an expected outcome of the program. The student: "(1) demonstrates critical thinking which enhances the concepts of nursing, humanity, health and environment in a dynamic world. (2) exhibits excellence in clinical judgment in the roles of the Associate Degree nurse" (*ADN Student's Handbook*, 1998, p. 6).

All students in both class groups were asked to participate, to keep the class intact, and to keep the experience as real as any instructor would encounter. Each student agreed by signing a consent form. There were 19 in the unpaired group, January to March 1998; the students' ages ranged from 19 to 39 with the mean of 25. The cultural backgrounds were eight Caucasians, four Hispanics, two Filipinos, one African/Caribbean, and four Asians. Six of the 19 students entered the programs from high school; the rest entered several years after high school. Two students were male and 17 students were female. There were 20 in the paired group, April to June, 1998, the students' ages ranged from 18 to 48, with the mean of 25. The cultural backgrounds were four Filipinos; four Asians; two Hispanics; and 10 Caucasians. Eight of the 20 students entered the nursing program directly from high school, and 12 entered several years after high school. There were five males and 15 females.

Setting

The setting is a weekly clinical experience in an acute care hospital on adult medical-surgical units. The clinical experiences are 9-hour days from 2:30 p.m. to 11:30 p.m. There were a total of 9 clinical days. Two of the clinical days were spent in the operating room observing surgeries and in respiratory therapy learning to assess lung sounds. Patient care responsibility included head-to-toe assessment; administration of oral, parenteral, and intravenous medications; conduction of treatments; and charting and assisting patients with p.m. care (e.g., back rubs, mouth care, and peri care). Included in the 9-hour clinical days were a 15-minute pre-conference and a 45-minute post-conference; students were allowed to ask questions and discuss issues that had arisen during the shift. Spiritual care, communication techniques, and problem-solving skills were also discussed. As the clinical instructor, I supervised 10 students on Wednesday evening and 10 students on Thursday evening. Student performance was graded on a satisfactory/unsatisfactory scale.

Pairing of Students

I followed Johnson et al.'s (1994) procedure for grouping of pairs by stratified random assignment. The teacher rank orders the students based on a criteria and then groups the students by high achievers with low achievers and middle achievers with middle achievers. I asked the previous clinical instructors from Nursing I and Nursing II to rank the students' clinical performance and critical-thinking ability using the Holistic Critical Thinking Scoring Rubric (see Appendix A1) (Facione & Facione, 1996a). I then paired the students, based on the information obtained from the teachers (see Appendix A2).

Those students with a critical-thinking score of 4 were paired with those with a critical-thinking score of 2, and students with a critical-thinking score of 3 were paired together. Every clinical time with the students gave me the opportunity to observe their work and their efforts to communicate and problem solve together.

Sources of Data

Sources of data to describe students' reflective processes (critical thinking) and the experience of unpaired students and paired students include: (1) weekly reflective journal writing (over 9 weeks), (2) two structured interviews with paired students only, and (3) my observations recorded in journal writing.

Journal Writing

Students' were asked to keep a weekly journal about their clinical experience. Unpaired and paired students answered specific guided questions (see Appendix A3) in their journals. The unpaired case group had one journal book each. For the pair, there was one journal book shared between them to encourage them to discuss together the answers to the questions and then write their answers. Facione and Facione (1996a) explain why the use of journal writing and talking help the observer assess for critical thinking. "To assess critical thinking in either nursing knowledge development or clinical-decision making, one's thinking processes must be externalized for others to observe and evaluate. For example, to permit education to assess clinical judgment in their students, the processes of making those judgments must be readily apparent by being spoken,

written, or demonstrated” (p. 135). In others words, in order for me to study the phenomenon of reflection there has to be an observable behavior.

Second, I used guided questions (see Appendix A3) because the students were new to the process of journal writing, and I wanted the questions to reflect the metacognitive process that surrounds the problem-solving process. The metacognitive process is exhibited by: “(1) analyzing and characterizing the problems at hand; (2) reflecting on what one knows or does not know that may be necessary for a solution; (3) devising a plan for attacking the problem; and (4) checking or monitoring progress” (Pesuit, 1992, p. 149). Again, by having an external device such as writing, the teaching can help facilitate the thinking process. Lastly, by having questions similar to “what do I really know about the nursing care situation, and how do I know it?” (Paul & Heaslip, 1995, p. 40), the teacher is assisting nursing students in beginning the process of critical reasoning and facilitating the process of making the nursing knowledge part of their own thinking process.

Questions 1 through 6 were patterned after the steps of the nursing process and problem-solving process, as well as key questions used in critical thinking (Alfaro-Lefevre, 1995). Questions 7 and 8 were taken from Patton et al.’s (1997) list of questions used in journal writing. Question 9 was an open-ended question for the students to identify thoughts and feelings around the clinical experience. This was based on Boud et al.’s (1985) model of reflection with the importance of identifying feelings in the reflective process.

Interviews

Two structured interviews were conducted that lasted 10 minutes, one at midterm and one at the end of the quarter. Each interview was aimed at how the individual was functioning as part of a pair. One question asked: "What problem-solving techniques are you using when a conflict arises while you are working together?" At the last interview a second question asked: "If you were to continue this partnership, what strengths would you carry on and what areas would you need to strengthen as you continue to work as a team?"

Participatory Observation

As a researcher, I did direct observation of the clinical setting. According to Merriam (1998), the reasons for direct observation are "to triangulate emerging findings with interviews and journal analysis" and "to provide some knowledge of the context" (p. 96). Knowledge of the context can be used later in clarifying what you have observed with the interviewee. I kept a journal of my thoughts, feelings, and questions as I worked with the students in both case studies, thus allowing me to practice being a reflective practitioner, as Schön (1991) recommends professionals should be to help generate research.

Protection of Human Subjects

Those participating in the study were asked to sign a consent form (see Appendix B). The consent form and the proposal for the study were reviewed and approved by the Human Subjects Review Board at the institution where I teach and from Andrews

University. The signed written consent form indicated the students' desire to participate in this study.

Since journal writing, interviews, and observation can convey students' personal information, and thus lead to stress and anxiety, as well as to feelings of breach of privacy, the following measures were reviewed with the students to reduce the risk of breach of confidentiality.

Measures reviewed prior to the onset of the study were:

1. Students were informed that participation in the study was completely voluntary and they were free to withdraw from the study at any time without reprisal.
2. Students were informed that their decision whether or not to participate would in no way affect their grade in the clinical evaluation. They were also informed that the journals would not be graded.
3. Although their care plans received a group grade, their performance evaluations were graded individually, thereby encouraging individual accountability.
4. Students were told I would keep a journal of my own observations and personal feelings, but, like their journals, their names would not be used in the study or in publications. The material solicited from my journal and from their journals would be carefully written so that the students' identity would not be revealed.
5. Students were informed that only the researcher and persons associated with the research project would have access to the text generated. For other individuals who might be in contact with the research project, all journals would be coded with numbers to ensure anonymity.

Data Analysis

Data analysis was based on the qualitative techniques of Miles and Huberman (1994) and the case study methods of Merriam (1998) and Yin (1994). In this process I analyzed the written journals of both case study groups for ideas and patterns. I clustered the patterns and examined them for themes and then named the categories. For instance words such as anxiety, stress, enjoyed, and great experience, I named as emotions and emotions became the category or the theme. Only the ideas that were found in the majority of the journals were classified as a theme. Although I had done some preliminary review of the literature, during the process of analyzing the themes, I allowed the data to speak for itself and named the themes accordingly. Next the description of the themes were integrated into a case study report. In the cross-case analysis, I compared the themes of the unpaired case study with the paired case study and then answered the research questions.

To determine how students reflect in the clinical setting, a rubric was developed in conjunction with a professor of education to evaluate the growth in reflection over time. The rubric was based on the types of reflection as described by Mezirow (1991) and the reflective model of Boud et al. (1985) (see Appendix A4). Criteria "A" was considered nonreflective action (Mezirow, 1991) since the student was telling only what happened with little thought involved. Criteria "B" of the question was given a point if there was reflective action. This reflective action included what the student perceived, thought, felt, or acted upon in the process of problem solving (Boud et al., 1985; Mezirow, 1991).

The B criteria were compared with the stages of Boud et al.'s (1985) reflective model. These stages are: (1) attendance to feelings, (2) association, (3) integration, (4) validation, (5) appropriation, and (6) outcome and action. Questions 1 and 2 were related to integration. In the integration stage the "individual begins the process of discrimination" (p. 32). This is the seeking of relationships or prior knowledge. Questions 3, 4, and 6 were closely related to the association stage. During the association phase "there is the connecting of the ideas and feelings which are part of the original experience and those which have occurred during reflection with existing knowledge and attitudes" (p. 42). Questions 8 and 9 best fit stage 4, where in the validation stage, the individual tests what he or she starts to integrate. This can be started by describing what steps can be taken to promote a change in the behavior. Questions 7 and 9, part A, were related to stage 1, but because this entailed more naming of their thoughts and feelings then starting to remove obstructing feelings or utilizing positive feelings, they were not included as part of the reflective process. Because stages 5 and 6 were considered as features more of critical reflection and probably not observed at the beginning levels of reflection, they were not included in the rubric.

Following is the reflective rubric that was developed and used to evaluate each journal:

- ___ 1. A. Identifies one major significant problem.
- ___ B. Identifies other related problems; may include reasons for the problem.
- (Integration)
- ___ 2. A. Identifies a problem that arose.

- ___ B. Explains reason for urgency or lack of urgency. (Integration)
 - ___ 3. A. Identifies one piece of knowledge needed to solve the problem.
 - ___ B. Identifies connecting pieces of information needed. (Association)
 - ___ 4. A. Uses external resources, when appropriate, to solve the problem.
 - ___ B. Recognizes personal resources as a resource. (Association)
 - ___ 5. A. Identifies all logical steps as a part of implementation process.
 - ___ 6. A. Uses reliable external reasons to influence thinking.
 - ___ B. Uses internal reason to influence thinking. (Association)
 - ___ 7. A. Identifies one strength connected to patient care.
 - ___ 8. A. Identifies one weakness connected with patient care.
 - ___ B. Explains how to improve on their weakness. (Validation)
 - ___ 9. A. Names obvious thoughts and feelings connected to patient experience.
 - ___ B. Expands reasons for feelings or thoughts from the experience.
- (Attendance to feelings and Validation)

For this study, only the B areas were added together for the individuals in the unpaired group and for each set of pairs in the paired group for the total of 7 points possible. Then the means were calculated weekly for the unpaired group and the paired group (see chapters 4 and 5 for the results). To determine reliability there were three coders—the principal investigator; a professor of education; and a nursing instructor in medical-surgical nursing. The formula used to determine inter-rater reliability was from Miles and Huberman (1994). Forty items were analyzed by the professor of education and me with inter-rater reliability of .90, and 1840 items were analyzed by the nursing

instructor and me with the inter-rater reliability of .87. Inter-rater reliability was calculated by dividing the number of agreed upon responses by the total possible responses.

Trustworthiness

The questions that faced me like any other researcher using qualitative research were: "Can the results of this research be trusted?" and "How can I convince the reader that what I wrote was an accurate portrayal of the experience?" In order to answer these questions there are strategies that the researcher can use.

One such strategy is structural corroboration. Eisner (1991) describes structural corroboration as "a confluence of evidence that breeds credibility, that allows us to feel confident about our observations, interpretations, and conclusions" (p.110). This is partially accomplished through multiple sources of data. In this study, evidence of themes occur in observations, interviews, and journals.

These themes were written in the case studies in such a way to provide a compelling case. "The *tight* argument, the *coherent* case, the *strength* of evidence are terms that suggest rightness of fit" (Eisner, 1991, p. 111). By including descriptions of what was observed and analyzed, the researcher believes that readers will be able to determine how close the research is to their own situation and will be able to use the information presented to understand and extend their experience. This has already happened with nurse educators who have read or discussed my findings.

Writing Style

In this dissertation I have chosen to write the students' journal comments as an integral part of the text. This promotes active voice as I blend student ideas with my own research. This is consistent with Zeller and Farmer's (1999) argument that "qualitative researchers [need] to develop their own style guidelines—ones more fitting to qualitative assumptions about knowledge, ones more reflective of action practices of qualitative researchers." (p. 1). Thus, instead of using traditional quotation marks, I have used italics to separate students voices from my own.

My Presence as a Researcher

*Being both researcher and teacher, my relationship to the students took on a new dimension. When I first asked students to participate in my research, they were very hesitant. Their picture of research was composed of rats running around a maze or a laboratory attendant doing something painful to them. They may have first felt inhibited or anxious about their experience. Could they really trust me? After all, could their words in writing and their actions cause them to fail? Developing a trusting relationship was important. I knew from my previous experience with the students in my pilot study that by my giving clear explanations with no judgmental statements the students would soon become more expressive of their feelings. Their confidence, also, would grow as they could see that they were actually having a part in real, *live* research. Their opinions could make a difference in how I could strengthen the strategies for the clinical setting.*

I entered the study with my own unique context. This context allowed me to respond to the situations that I encountered. It helped me to interpret and explain what was seen, and, as a result, gave my own signature to the study (Eisner, 1991). My professional background includes experiences in medical-surgical nursing. I have a Master's of Science degree with an emphasis in Adult and Aging. I taught in Africa for 4 years, during which time I was also the director of a nursing diploma program. For the last 6 years I have taught medical-surgical nursing at the college where I am presently employed. For the last 5 years I have incorporated cooperative learning principles into the classroom, thus bringing experience and knowledge to the study.

Second, in case study inquiry, Eisner (1985) suggests that the researcher is a teacher. Stake (1994) expands this concept further:

Teaching *didactically*, the researcher teaches what he or she has learned. Arranging for what educationists call *discovery learning*, the researcher provides material for readers to learn, on their own, things the researcher does not know as well as those he or she does know. (p. 240)

My students and I bring to the reader knowledge of the phenomenon of learning in the clinical setting as it unfolds in its naturalistic experience. The bringing of self and the experiences of the students to the reader helps the reader to see the experience from several points of view and thus to see a different perspective (Eisner, 1991). Therefore being a teacher, researcher, and the instrument of research, I "assist the reader in the construction of knowledge" (Stake, 1994, p. 240) thereby making the study subjective. But without the subjectivity, the voices of the students and the researcher are not heard. Those voices make the experience meaningful and understandable to all who read the

research. Consequently, biases are present in a qualitative study and, as such, I need to be aware of them and make them known to the reader.

When I entered the study one of my biases was that I believed students are interested in participating in their learning and, as such, they could make that experience meaningful to themselves. They can provide a view of their learning situation that will contribute to the development of my pedagogical methods. Another bias was that I had been using cooperative learning in the classroom and I believe that cooperative learning would work in the clinical setting.

Strengths of the Study

With case study research, the case allows the researcher to examine the complexities of the situation. It allows the researcher to make a connections of ordinary practice in its natural setting to the academic setting (Stake, 1994). There was no attempt to control the external environment and thus the researcher can then describe the behavior occurring naturally (Merriam, 1998).

The strength of case study research is to provide an understanding of the complex phenomenon in its natural setting. The clinical setting is very complex. Students have only a short time to learn, to function, to start to think as a nurse. By using case study inquiry, I, the teacher and researcher, can provide an insider's perspective of a pedagogical method that can assist students to function safely and competently in the clinical setting. In order to provide description and interpretation of a lived experience as it emerged, all students were included in the study.

Summary

There are many complex and confounding activities that nursing students must learn as they care for the patients in the hospital setting. The intent of this case study is to describe the lived experience of the students and the teacher as they work together. The context of this study took place in a nursing program at a liberal arts college. The method chosen was journal writing individually and in pairs. These journals were analyzed for themes and by a reflective rubric which was developed and adapted from Boud et al.'s (1985) reflective model. Included in this chapter is a description of how the human subjects were protected, my presence as a researcher, strengths and limitations.

In the following chapter, the lived experience of nursing students as they work individually in the clinical setting will be described as it unfolds in the emergence of themes. The results from the analysis of the journals by the reflective rubric will be explained.

CHAPTER 4

THE DATA SPEAK TO ME—UNPAIRED STUDENTS

Introduction

From the first day of clinical experience, the student and teacher are working and learning together. In this learning process, a relationship is being established between the student and the teacher to facilitate learning. The clinical experience involves learning to solve problems, practicing new skills, improving on previous nursing skills, and applying information learned in the classroom to what is being observed and practiced in the clinical setting.

The first part of this chapter includes vignettes from nursing students who have written about their experiences in the clinical setting. The descriptions were taken from the first day of clinical experience, the middle of the quarter, and the last day of the clinical experience. The purpose of sharing these vignettes is to capture the lived experience of the students as they problem solve during the 9 weeks of the clinical experience. The middle part of the chapter includes statements of reflections the students made in their journals. Journal writing was a method incorporated during the quarter to assist the student in problem solving and in thinking reflectively. The statements made by the student are presentations of the process of reflection. The last part of the chapter

describes the themes that emerged from the students' written journals. Because clinical experience is a complex learning experience, as evidenced in the shared themes, the reader will catch glimpses of this complex process.

Clinical Setting

Students were divided into two groups, one group met on Wednesday and the other group which met on Thursday. The clinical day started at 2:30 p.m. in a conference room at the hospital which is located about 6 miles from the college campus. From 2:30 p.m. to about 3:00 p.m. (pre-conference time) the students shared the care plans they had written from information they had collected from the chart the night before clinical experience. I usually posted the assigned patients about 4:00 p.m. the previous evening. I would arrive about 20 minutes before pre-conference to review the condition of the patients and to verify that the patients were still in the hospital. Because of decreased patient time in the hospital, there was no guarantee the patient would still be there by clinical time. If the student's patient had been discharged, I would assign a new patient to the student. During the pre-conference time I discussed with the students changes in the patient's condition, skills needed to be performed during the shift, and new assignments that had arisen. I would also answer questions about the patients that the students would have from the information that was gathered. Most of the time the questions involved medications that could not be found in the drug books or a procedure that the student had never performed or perhaps never seen before. The first 2 weeks the students had only one patient. By the third week, this increased to two patients for a 9-hour period.

After pre-conference the students would proceed to their assigned area to review the chart, medication sheet, and kardex (a form that had the patient's activities, procedures, intravenous solutions, and laboratory tests ordered by the doctor), and to ascertain what changes had arisen since they had last collected the data. The student would introduce him or herself to the nurse in charge of the patient and receive a short report about the condition of the patient. Students would organize their time on a schedule form based on the information just obtained.

The student would then go and introduce him or herself to the patient. The rest of the evening would include patient-care activities such as medications, treatments, and preparing the patient for bed, assessment of the patient's condition, and charting the activities and events that may have developed during the time the student was there. The student also spent time conversing with the patient and the family as well as collaborating with the nurse on problems as they arose throughout the evening.

After pre-conference, I made rounds to the four areas (intensive care unit, cardiac care unit, medical-surgical unit, and transitional care unit) where the students were located. During the first part of the shift, I reviewed the care plans and the schedule the student had designed. I had the student give me a short report about the condition of the clients and discuss any problems.

I spent the rest of the evening in problem-solving activities such as what to do with an elevated blood pressure, observing procedures, validating the medications that were to be given to the patient by the student, physical assessment of the patient with the student, collaborating with the nurses and doctors, and reviewing the charting the student had

written. The last activity before post-conference was a review of the charts and the medication records to make sure all activities were completed.

Post-conference was about 45 minutes to an hour based on the time we arrived to the conference room. At the beginning of the quarter, I allowed the students to write in their journal the last 15 minutes of the time together. I discovered that the students ended up spending more time talking together instead of writing so I changed the writing activity to the middle part of the conference. Post-conference also included time for the group members to review what they had learned and what problems they had struggled with during the night. I would spend about 10 to 15 minutes demonstrating a procedure such as tracheostomy care. We ended at 11:30 p.m. Because post-conference was late at night, students struggled to stay awake. I often wondered how beneficial the time was because of the lateness of the hour. I was concerned with the drive home since some students lived 30-60 miles away.

Clinical Experience

The First Day

At the beginning of lab, I was really scared and overwhelmed. I felt a little lost in orientation which led to a lot of stress and anxiety. As a result, I think we students got frustrated and started to doubt ourselves. I know I did, at least. I did not think I was going to make it. I have noticed that in the past two quarters, I have been "scared" of my teachers. It does ruin, or at least slows down my learning (Journal 107, p. 3).

Since I have clinical experiences on Wednesday and Thursday, I had two beginnings. In both groups there was an aura of anxiety. This is normal, but the students do not think so. I sometimes feel like a mother bird nudging her children out of the nest. It is a long way to the ground. The students are reluctant to go out the door of the conference room to get started. I had to lead the way.

The first 2 hours of the shift were busy for me. I was concerned whether the students would page me when they needed assistance, or would they work on their own trying to solve problems beyond their scope of practice. For these two nights I was supervising students over only two areas of the hospital. What a difference that was for the students! Because of close proximity with each other, I noticed the students were able to more easily collaborate with each other. Carol made this statement in her journal indicating the importance of being with other students. *I am really thankful for my classmates tonight. They did not get tired of my questions. Their smiles and their explanations helped me to care for the patients* (Journal 107, p. 1). This did change in 2 weeks. The students were placed into four different areas on three different floors of the hospital increasing the distance for me to observe and making collaboration with each other difficult.

I am very timid with my patients and have too small of vocabulary. Somehow I need to build up my vocabulary and learn to communicate with the patients (Journal 107, pp 1, 2). As an instructor I had tried to assure the students that I would be available to assist them when they paged me on a beeper and I would answer their questions when they talked to me, *I am so afraid that I will make medication errors and this made me*

more nervous (Journal 103, p. 2). Students had commented to me that they hoped they would get a good nurse to talk with, one who would understand their feelings and answer their questions, one who would not think their questions were stupid.

After assessing my patient's breath sounds, the patient complained of having trouble breathing especially after waking up. I know patients complaining of shortness of breath need assistance very soon. I put the head of the bed up and contacted the respiratory therapist. I explained to him the problem. After he and I assessed breath sounds and checked the oxygen saturation level, we put her on oxygen. The problem was solved (Journal 102, p. 1).

Although some anxiety is normal, I looked for severe symptoms which could lead a student to be nonfunctional and unable to think in the problem-solving process. These first 2 nights the students had their anxiety under control. By post-conference time, they were smiling and stating they were feeling better.

It is the end of the shift and I made it. I was able to set some of my fears aside and put my knowledge into use. I am realizing that the clinical experience is one of learning experiences, and tonight I had a really good experience and feel nursing can be a very exhilarating career as well as rewarding, I think. I was able to step out of myself and concentrate on the patient and this was most helpful (Journal 102, p. 3).

There was a difference in the two groups (Wednesday and Thursday) in regard to personality and responsiveness. Wednesday's group was more talkative and asked more questions. In fact, Linda asked many questions—often before I had time to finish explaining information—that I wondered if this was evidence of her fear and at the same

time I was somewhat irritated. In spite of my feelings about the multiple questions Linda asked, I found Linda well-prepared for clinical experience. Thursday's group was quieter. There was a difference in the journals of the Wednesday group versus the Thursday group. The Wednesday group seemed to express more statements of confusion and anxiety. This disparity may have resulted because I explained the information differently to Thursday's group in response to the questions the Wednesday Group asked. I am amazed at the differences, but I realize that I must address the groups according to their differences.

Problem solving was seen in different forms on the first day. There were two incidences of shortness of breath exhibited by the patients. The first incident is described above in Joan's vignette (Journal 102). The second one occurred when I was assisting Terry. In the second incident, there was a difference in my perception and Terry's perception as to how the problem was solved and what events had actually transpired. Terry mentioned only the shortness of breath in her description in her journal, but there was chest pain accompanying the shortness of breath that was more serious. In evaluating the differences in both students' journals (Joan and Terry), I believe the knowledge used in solving the problem and the ability to assess the patient was a weakness in Terry. Terry did not use her knowledge base and exhibited poor assessment skills in gathering data in order to solve the problem. This is of great concern to me because if a student is weak in an area such as using their knowledge, that student may make an incorrect decision that could harm the patient. This was averted because I was there to guide the student in alleviating the shortness of breath problem.

The Middle of the Quarter

By the middle of the quarter, students were gaining more confidence. Rose describes her clinical day: *I had a hectic day, but overall this clinical experience by far was the most educational for me. During my shift my patient had a hypoglycemic attack. Her blood sugar was 168, and I had given Regular Insulin, which was ordered. She did not eat very much for supper, and two hours later she was diaphoretic. I had looked up the word diaphoresis in Taber's [Medical] Dictionary before I had come to the hospital so I knew what it was. I did a finger stick for glucose and the result was 38 mg/dl. The LVN [licence vocational nurse] told me to give her juice with sugar STAT [right now] to get her blood glucose up. About 20 minutes later another blood sugar test was performed and the blood sugar was 63 mg/dl. I was told to give her more juice with sugar. But the patient was very weak, lethargic, drowsy, and still sweating. I was afraid she may aspirate. The LVN put sugar under the tongue which would be absorbed faster through the membranes. The LVN also notified the doctor—something I could not do. The doctor changed the sliding scale. About 2200 [10:00 p.m.] her blood glucose was up to 90 mg/dl, but still she was weak and lethargic. At least the blood sugar level was up.*

I think that tonight I found out how I handle myself in a situation like this hypoglycemic reaction. I felt that I was more independent and was not anxious over her attack. Even though I was a little unsure about what exactly to do when a hypoglycemic reaction occurs, I handled the problem better than I thought I would be able to.

I feel that even though I had questions for the RN [registered nurse] and LVN, they still gave me the independence and encouragement to be able to react to a crisis.

With each clinical experience my confidence with patient care increases (Journal 115, pp. 7, 8).

Sometimes a mistake is made by a student. This mistake can be due to poor problem solving or ineffective thinking. As an instructor, I wonder if the student has learned from her or his mistakes. In reading Marie's journal, I found where she reflected on a mistake that was made during her time with the patient. She gave the reasons for the mistake she had made and what she was going to do next time. The statement from her journal was as follows: *I needed to have asked myself why things were going the way they were and I should have asked the nurse a question regarding why the NG [nasogastric tube] was clamped. Although the nurse was busy, I know now that next time I am going to ask, "Why" for everything and try to come up with a solution right away. Even though the staff might have been busy, I should not have felt that my lab instructor or even the staff was too busy to help me solve the problem.*

Well, I hate to think that it took a mistake to help me learn something new. I felt that I was not communicating as I should have with my nurse, CNA [certified nurse assistant] or maybe even the patient (I could have asked her about her own care; she was keeping me on track sometimes). Now I understand the nurses a little more when they are having a busy night. But I also realized that many mistakes are more apt to occur on a busy night. From now on, I am "gonna" take as long as I need to analyze things and learn how to work with others even through busy times (Journal 112, pp. 7, 8).

Reading this journal made me realize the importance of journals and the trust factor that is involved in the journal writing. I had talked with the student about the

mistake that had been made, but I did not know the impact of the discussion until I read the journal. It took a lot of trust on the student's part to write the information, but I knew then that the student would grow as a result of the experience. The student became very conscientious in asking questions and problem solving.

A different attitude permeates this class, which is something I have not felt before. When I corrected students care plans, they thanked me for the help. I usually get no reply or a grumbling complaint. Appreciation for help was also written into the journals. Cindy had a very anxious day in that she felt that she was not prepared for caring for her patients. Her comment to me in the journal was as follows: *Rita, thanks for being so calm and not being impatient with me. It was just what I needed at the time* (Journal 117, p. 14). Reading this made me realize the enormous influence the teacher has on students, especially when students are stressed for whatever reason. This statement made by Cindy also made me feel appreciated and willing to continue in my practice.

The End of Quarter

By the end of the quarter, students are usually bringing the nursing process problem-solving steps together no matter how small the problem. *For my patient J. D., I had picked anxiety as a nursing diagnosis which applied to him, but I think his problem was more than anxiety. He was very confused and saying a lot of things that did not make sense. I believe he needs some psychological help. His problem was a concern about having a bowel movement. He had one in the morning but he stated that he felt pains in his stomach and had the urge to have a bowel movement. The problem was not an urgent*

one, but if I did not try to solve or address the problem, he would have become very agitated. After I had assessed his symptoms, I checked his chart and kardex to see if there were any PRN [whenever necessary] orders for enemas or laxative. I talked with the nurse. He and I did a rectal examination for impaction. When no impaction was felt, the patient still wanted an enema to relieve his symptoms. I then administered an enema because I knew he would not be comfortable. There was no result from the enema but at least he calmed down (Journal 101, pp. 21, 22). The student identified the correct steps to solve the problem of this patient and then with the assistance of the registered nurse (RN) implemented the plan which relieved the discomfort of the patient.

Rose was able to connect what she had learned previously about steps to take to lower a temperature and apply them to her patient: *There were two minor problems on my patient. He had an Aortic Valve Replacement and was running a temperature of 100 degrees. He felt warm to the touch. He was refusing to ambulate which is a requirement post surgery. I knew that his temperature was probably elevated because the room was so warm when I walked in. His respirations were a bit fast probably compensating for his elevated temperature. I also knew that I needed to get him to ambulate to help decrease his temperature. I knew that I did not need to inform the nurse unless the temperature was over 101 so I used what I had learned previously. I rechecked his temperature and gave him a cool wash cloth to cool him down and a towel to wipe his sweat. With these small steps I was able to help lower his temperature with out the use of medications (Journal 115, p. 22).*

This is the last lab. There seems to be a feeling of relief in the students tonight. It is a quiet evening for once because the patient count is down. My activities are not as fast and furious as they have been in the past few weeks. This quietness has given the students time to think about what they are doing, and has given me more time to observe more thoroughly and time to ask questions of the students. I was able to visit the students sooner and interact with them about the history of the patients they had and what goals of care the students were planning for their patients. The students seemed to have a good grasp as to what was going on with the patients. Even when I asked them questions about medications and treatment, they were able to answer my questions. I did not see the confusion on their faces as they have had in the past. The RNs had more time to spend in giving a report to the students. This may have led the students to feel more comfortable about their environment. Thus, they responded to me more easily. The students also seemed more at ease with their problem-solving ability. I am expecting them to function at this level by now.

Because it was quieter this evening, I was able to spend more time with the students and their patients. For instance, Bill had already done his assessment and was asking me about the edema on the legs of the patient. He was saying that earlier that day, according to the records, the edema was 4+ pitting. He felt that it had gone down. But he was questioning whether the patient had edema or was obese. Because I had time right then, we were able to go in and assess the patient together. I was able to show him the relationship of theory to the actual patient. I demonstrated for the student how to check for edema. I verified his findings and was able to show him other areas that needed to be

evaluated. I felt this opportunity to assess with the student was a good way to help the student connect theory (assessment of the cardiac conditions) with practice.

After the assessment, I was able to give suggestions to the students about the care of a patient with dry, flaky skin on the legs. At this point I was more in a telling mode and I really wished I had spent time asking Bill questions as to how he would assist the patient in the care of the skin. This may have increased this student's problem-solving ability if I had taken the time to do this.

I had the student apply lotion to the patient's flaky skin. I felt this gave the student the opportunity to be with the patient and learn about the patient. This patient was feeling better and was bedridden and probably very lonely. She talked a long time. By helping the student spend time with the patient, he did learn about the psychosocial component of wholeness and made connections in writing in his journal about the care of the patient. Bill wrote: *I felt I was able to help her a lot by talking with her. She seemed very lonely* (Journal 108, p. 9). Sometimes I wish students could experience learning by osmosis from my brain so they could learn about nursing faster and not miss the opportunities in caring for the patient's real needs.

One of the goals for a student who had not been performing well in the quarter was being met tonight. The student was keeping me informed and problem solving on her own, which she had not done in the past. This was real progress for the student. I assisted the student in a new procedure. Since there was a time span between when the procedure was taught and the performance of this procedure, I reviewed the steps of the procedure with the student. She did a good job performing the procedure. I felt she

would be able to do it again with minimal assistance. I could see on her face the feeling of accomplishment.

Because it was a quiet evening and the students are more independent at this point, I observed the activities of the students in their ability to interact with patients, personnel, and each other. People may have thought I was lazy or something just sitting there at the nurses' desk, but it was like being a mouse in the corner hearing and seeing what was transpiring. I observed three students dialoguing with each other. This had not happened in the past except for the very first day of lab. They were looking at each other's materials and they were asking each other questions. Seeing them collaborating with each other gave me a delightful, warm feeling. The students looked more relaxed working together.

Post-conference is an important time to share information and assist students in problem solving. I asked Bill to describe a code that he had seen this evening. A code is when the patient's heart or respiration has stopped and CPR was started. The description he gave the group was quite thorough. He was able to answer the students' questions and to clarify information without assistance from me.

Linda had seen an endoscopy. She was also able to give a thorough description, explaining exactly what she saw—the vocal cords, the esophagus, the stomach, and the pylorus. It was fascinating to hear her just rattle off the terminology and explain the anatomy so well.

One of the students was concerned about seeing surgery the following week. I suggested that she question some of the more experienced students about surgery, so she could feel prepared to succeed. She had genuine fear, but once she started talking with

her peers who had observed surgery her anxiety regarding an unfamiliar situation was greatly reduced. This indicated to me that interaction with other peers assist students in learning and decreases stress.

Problem Solving in Journal Writing

I incorporated the use of journals with the expectation that students might become better problem solvers if required to respond to specific questions about their nursing experience. I developed a rubric with A part pertaining to problem solving and B part pertaining to reflection. The following are the criteria used for evaluating the responses:

1. Identifies one major significant problem.
2. Identifies a problem that arose.
3. Identifies one piece of knowledge needed to solve the problem.
4. Uses external resources when appropriate to solve the problem.
5. Identifies all logical steps as a part of implementation process.
6. Uses reliable external reasons to influence thinking.
7. Identifies one strength connect to patient care.
8. Identifies one weakness connected with patient care.
9. Names obvious thoughts and feelings connected to patient experience.

Each of these criterion was allocated 1 point each for a total of 9 points. The mean was then calculated for the group. A simple linear regression analysis was performed. There was no significant change in the means ($p > .05$) across the 9 weeks (see Appendix A6). Their problem solving skills remained consistent. In evaluating how well

the group answered the journal questions, percentages of the answers to the questions were calculated (see Appendix A6). The lowest percentage was question 3 at 78% and 5 at 79%. When reviewing the students answers, the possible reasons for these low percentages are that the students were having difficulty in identifying the specific knowledge needed in problem solving, and, therefore, they were unable to identify the correct logical steps to take in the process.

Summary

These three “snap-shots” taken from the beginning, middle and end of the quarter capture the progression of problem-solving ability in this nursing clinical. At the beginning students lack confidence in their ability and are very anxious. The last day of clinical, everyone is more relaxed and they tend to meet the challenges of nursing with greater ease.

Reflection

Reflection is a process whereby a person revisits a lived experience. There can be a sense of inner discomfort as the individual revisits the experience. Removing the obstructing feelings is the beginning of the reflective process. As a result of “mulling” over this experience, the individual becomes open to new information (Boud et al., 1985). This is when the individual reassesses prior knowledge, feelings, and attitudes towards the problem and determines the relationship of the old knowledge to make way for new information. The person may choose to make a decision or postpone the decision because of what has influenced the thinking. When the individual reaches the “aha” experience,

learning has taken place and takes on a personal context (Boyd & Fales, 1983). Being committed to action is the outcome of reflection (Boud et al., 1985).

The following was taken from Andrea's journal: *A problem arose not with my patient but my patient's roommate. The roommate was in restraints and he was very confused. Every time I was in the room, he wanted my help or wanted to talk to me. He kept telling me that he was feeling very closed in and needed the restraints off. I wanted to help him. The whole time I was there I do not believe anyone helped this man. I knew that a patient in restraints needed to be checked more often, and just because he was confused, I felt he needed someone to talk to him and help orientate him. I tried to get help from the nurse, but she was busy with an admission and another patient who was in great pain. I knew the patient needed the restraints but he needed his other needs addressed.*

The patient's discomfort and distress was what influenced my thinking. He kept calling out and talking out-loud when I was in with my patient. I talked with the registered nurse, and she helped me understand the patient but nothing was done. Finally around 5:30, I found the CNA who came in to talk to the patient and assist him to the bathroom. The problem was solved by the CNA taking him to the bathroom and allowing him to sit up in bed. The lights were turned on, and his mind was put at ease (Journal 101, pp. 2, 3).

Because of the inner sense of discomfort (conflict) within the mind and knowledge that had been taught to her from Nursing 1, the student was able to solve the problem. When we talked about the experience in post-conference, she was determined not to let

this happen to any of her patients whom she would care for. This statement by her was an outcome of reflection. I feel that if she would encounter any patient with this kind of problem again she would act upon the problem based on the previous reflection.

Reflection is considered a process and can be intentionally taught (Boyd & Fales, 1983). As an educator, I assigned each student to write in a journal answering specific questions. Following are the questions (see chapter 3 for reasons for questions and explanation for reflective score) answered by the students in their journals and the criteria and in brackets stages of reflection for questions 1, 2, 3, 4, 6, 8, and 9.

1. Looking back, do you think the problems that you identified were the most important ones for the patient? What additional problems do you now identify as the result of caring for the patients?

Criteria: Identifies other related problems which may include reasons for the problem. (Integration)

2. Identify a problem or a need that arose during the shift. Explain the circumstance of this problem including whom, what, when, where, and how urgent was the problem?

Criteria: Explains reason for urgency or lack of urgency. (Integration)

3. What knowledge was required for you to solve the problem?

Criteria: Identifies connecting piece of information needed. (Association)

4. What resources helped you to solve the problem?

Criteria: Recognizes personal resources as a resource. (Association)

5. What steps did you take to help solve the problem?

6. What influenced your thinking about this problem?

Criteria: Uses internal reason to influence thinking. (Association)

7. What were your strengths for this clinical experience?

8. What were your weaknesses and tell how you will strengthen these weaknesses the next clinical experience?

Criteria: Explains how to improve on his or her weakness. (Validation)

9. What were other thoughts and feelings about your clinical experience today?

Criteria: Expands reason for thoughts or feelings from the experience. (Attendance to feelings and Validation)

In order to determine the presence of reflection, I developed a rubric (see Appendix A4 and chapter 3) that assessed the reflective elements by the questions that were asked. The students responded to 9 questions. Seven questions were given a reflective score of 1 point each, making a total possible reflective score of 7 points. Each student was given a reflective score based on the analysis of answers to the questions. The mean was calculated for the 19 students for each week during the clinical experience (see Figure 1 and Appendix A5). A simple linear regression analysis for change was performed. There was no significant change in the means ($p > .05$) across the nine weeks (see Appendix A7).

To assist in understanding which questions the students may have had difficulty in reflecting upon, the percentages of each B criteria for the 19 students were calculated. For the first week, the percentage answered for each reflective element (see Appendix A7)

was: question 1 at 56%, question 2 at 50%, question 3 at 31%, question 4 at 19%, questions 6 at 44%; question 8 at 69%; and question 9 at 53%. By week 5 (the lowest

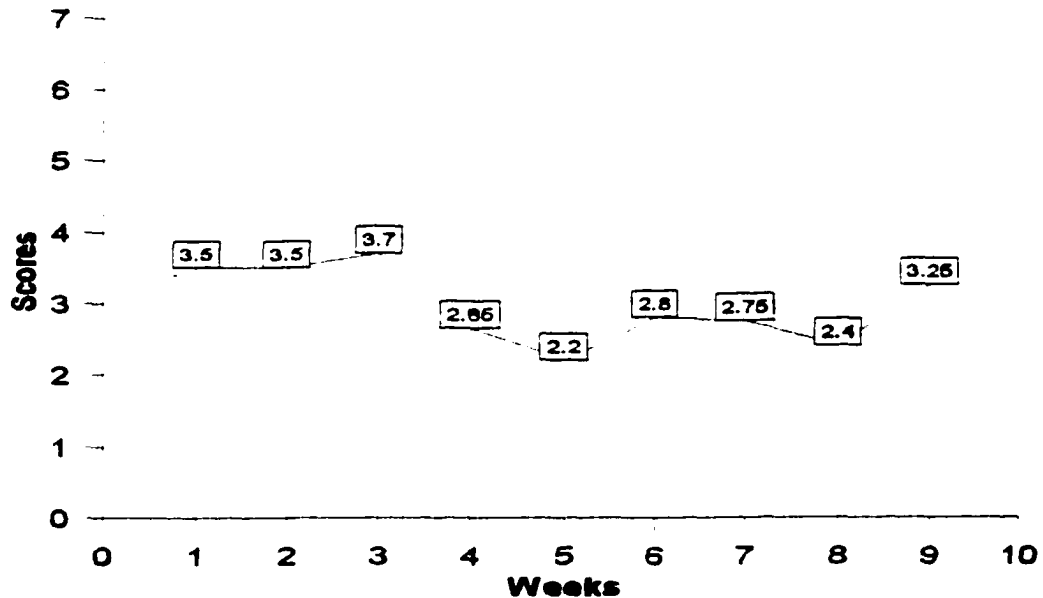


Figure 1. Mean weekly reflective score of unpaired students over 9 weeks.

group mean reflective score) the percentage answered was: question 1 at 50%, question 2 at 29%, question 3 at 07%, question 4 at 21%, question 6 at 14%, question 8 at 71%, and question 9 at 50% answering the questions reflectively. The questions that seemed to have the greater amount of change downward were questions 3 and 6. Questions 1 and 8 had the highest percentage. Calculation of the average of the percentages for the nine weeks revealed that question 3 at 21%, question 4 at 25 % and questions 6 at 35% were the lowest for the quarter. These results may indicate that students have difficulty in connecting knowledge needed in solving problems, that they do not recognize themselves

as a source of knowledge, and do not always know what influences their problem-solving decisions. This would be consistent with Baxter Magolda's (1992) findings on reasoning and knowing in college students.

A possible reason for reflection not increasing to a higher level than the beginning score may be that students did not journal conscientiously because they felt they did not have time or interest in writing in their journal. One student commented, *You must know when we are writing well and when we are not*. She pointed to her journal and asked me to look at it. As I did, she remarked, *Now, can't you see I did not do a very good job last time?* She then stated to me that she would try to do better in the future.

A possible second reason may be because I chose not to give extensive feedback in the journals. I wanted to remove my influence in the reflective process for both the unpaired and paired students. In Lewinian's (cited in Kolb, 1984) Model of Experiential Learning in order for students to move from the observation and reflection level to the formation of abstract concepts and generalizations, they need immediate feedback. Lack of improvement in reflection may not have taken place since feedback was infrequent.

Themes

The themes emerged from the written journals and personal notes for this case study. The themes include emotions, ways of knowing, collaboration and dialogue, communication, learning, connecting theory with practice, and professional role.

Emotions

As a part of the learning process and critical thinking, emotions can motivate or inhibit what is being learned and what is being reflected upon. “Good moods, while they last, enhance the ability to think flexibly and with more complexity, thus making it easier to find solutions to problems, whether intellectual or interpersonal” (Goleman, 1994, p. 85). In the journal writing the students freely expressed their feelings.

Positive emotions motivated the student to continue in the clinical experience. It gave them a relaxed warm feeling, making the day a worthwhile experience. Positive emotions made the student willing to come back again and learn in the clinical setting. Positive feelings were expressed in statements such as: *I was inspired by the hope and tenacity of my patient* (Journal 109, p. 15). *I enjoyed my clinical experience. I feel that when I am at my clinicals that I learn the most about nursing* (Journal 110, p. 4).

Feelings of affirmation: *The nurse told me that she was glad that I was there this evening* (Journal 115, p. 3). Often these positive feelings were expressed in post-conference when the students were discussing the events of the day. I could almost see the positive feelings in the students’ faces and hear it in their voices.

These positive feelings promoted self-esteem: *This lab helped me to bring up my confidence level from last time. And I also felt I got a lot accomplished with the help of the rest of the health care team* (Journal 112, p.11).

Negative feelings bring the opposite effect to the student. Negative feelings can be barriers to reflection (Boud & Walker, 1993). “Being in a foul mood biases memory in a negative direction, making us more likely to contract into a fearful, overly cautious

decision. Emotions out of control impede the intellect” (Goleman, 1994, p. 86). Because an individual is in a foul mood, this mood can effect self-esteem and the confidence to make a correct decision. Although anxiety can promote a state of alertness, it often brings the feelings of disorientation, confusion, and discouragement (Alfaro-Lefevre, 1995).

Negative feelings such as: *I was feeling really overwhelmed before lab. I came a little too close to using this lab as my drop lab. Just the psychological impact of having two patients really affected me* (Journal 108, p. 3). *When I started my patient care today, I was a little bit nervous. I did not want to make the same mistake that I made last time* (Journal 112, p. 8). *I felt disorganized and a little disoriented before change of shift for p.m. shift. Two patients add a lot of paper work I was not used to* (Journal 106, p. 4).

The feeling of anxiety coupled with expectations of how the student should perform affects how the student performs throughout the clinical day. *I was not aware of my patient's post-operative status. I was unprepared and the nurses were too busy to help so I had an anxiety attack. Terrible!!! I allowed my anxiety to influence my whole night and all following procedures. It exhausted me to be so emotional, and I consequently became very disorganized. This can be dangerous as a nurse and is unprofessional* (Journal 117, pp. 12, 13). The negative feeling of anxiety led to decrease in confidence in her abilities to think through the problem. Fortunately for her, the nurse and I influenced her thinking so that she could calm down and function the rest of the evening.

Ways of Knowing

There are many ways of knowing. All of them are important in problem solving and critical thinking. One of the ways of knowing is knowing/caring for the patient (Jenks, 1993). When a student gets to “know” his or her own patient, the student can converse and intervene more readily in the care of the patient.

Crystal felt knowing the patient was her strength. *My strength this evening was knowing the patient's history. It helped me to understand any other problems they might be going through* (Journal 105, p. 14).

Getting to know the patient and spending time communicating help patients to relax. *I needed patience with J. D. He could be very demanding at times, but when I could talk to him calmly and take time to listen to him. I think it made him relax* (Journal 101, p. 23).

Students felt that they were able to get acquainted with the patients even if it was for a short period of time. *Although I was only with my patient for three hours, I felt I was able to get to know him better* (Journal 112, p. 12).

A second way of knowing is the use of previous knowledge. Without a “base” knowledge of some kind, students cannot problem solve or even learn. “One of the most important principles of educational psychology is that the most important single factor that influences learning is what the learner already knows” (All & Havens, 1997, p. 1218). Cholowski and Chan (1995) in describing the “Knowledge Driven Model” of problem solving, concluded the more existing knowledge the student has, the better he or she can integrate the clinical data in making appropriate clinical decisions. Although I had

specifically asked what knowledge was brought to the problem-solving process, the responses to this question can be divided into three areas:

1. Information the students learned from Nursing I and II and from the sciences: *Knowledge to check intake and output* [from Nursing 1] (Journal 106, p. 2). *Knowledge that was required was the fact that I knew diversion is a good way to help with pain* [Nursing II] *and also the knowledge of helping to reduce anxiety by giving the patient reassuring statements of help calm the patient* [Psychology and Nursing II] (Journal 102, p. 5). *I needed the knowledge of the function of the bowels to solve the problem* [anatomy] (Journal 101, p. 2).

2. Knowledge the students learned this quarter (Nursing III): *Third quarter nursing knowledge* (Journal 119, p. 5); *I had to know that the I.V. sites should not leak fluid or blood, and when they are puffy or swollen, this is not normal. The I.V. solution could be leaking into subcutaneous tissue and the needle dislodged from the vein* (Journal 101, p. 13).

One of the "problems" I had was that I thought I had heard a murmur. I heard it over the right second/third intercostal space. The S₂ was stronger than the S₁ and I heard a sh—sound similar to the one I had heard in the cardiac assessment video (Journal 112, p. 16). The student is comparing the sound that she heard in the patient to what she had heard from a video that was required for class that week.

3. Common sense: *Common sense basically helped me to identify the problem* (Journal 119, p. 1). *I think that with these problems it was mainly common sense I used to solve the problems* (Journal 114, p. 2).

Knowledge was an important factor in influencing the students' thinking.

Determining what influences your thinking is important in problem solving. *The techniques we learned about communication in Nursing Fundamentals and Nursing 154 is what influenced my thinking* (Journal 102, p. 9). *My thinking was influenced by what I had learned from class with patients with elevated temperatures* (Journal 105, p. 19).

Collaboration and Dialogue

Dialogue is important in making learning an active process (Lambright, 1995).

Being able to feel comfortable as a part of the team and a nurse interested enough to dialogue with the student made the student feel important and needed. *I had a nurse who expected a lot from me—which was good for me. He had time to explain and help me. Other nurses can be too busy sometimes. I was happy that he wanted to help me take out a JP drain. I liked it when nurses were willing to let me help even if it was not my patient* (Journal 101, p. 24).

It can be detrimental to the student if she feels like she cannot communicate with the nurse. *I need more confidence when communicating with the others nurses. I tended to just listen, [not] sharing my thoughts and feelings. When it is time to give report at night, I tend to freeze and forget the important things to mention to the nurse* (Journal 101, p. 23).

Communication

One of the questions the students answered was: What are your strengths? The most repeated strength was communication, especially with the patient. "Critical thinkers

are good communicators, realizing that mutual exchange of ideas is essential to understanding the facts and finding the best solutions” (Alfaro-Lefevre, 1995, p. 10). It was important for the student to use communication in getting to know the patient. *I felt like I had good communication skills with my client. I obtained the information I needed in a way that did not threaten or belittle my patient* (Journal 110, p. 4).

Marie felt that communication with the nurse helped in solving the problem. *My strengths for this clinical experience were 1. Good communication with nurse, 2. Good communication with patient, and 3. Good communication with patient's family. When a problem arose, I would inform the nurse and try to solve the problem by the end of my shift* (Journal 112, p. 2).

Learning

It may seem unconventional to have learning as a theme, but the words *I learned a lot in clinical today* were expressed in most of the journals. According to Kolb (1984), “learning is the process whereby knowledge is created through the transformation of experience” (p. 38). As the result of reflecting on the clinical experience, student learning took place. Because of the perceived learning process, knowledge is created and recreated in the minds of the learner (Kolb, 1984). Learning in an experiential climate like the clinical setting “involves the whole learner in cognitive, psychomotor and affective aspects of the learning event” (Reilly & Ommerman, 1992, p. 165). For the students, the psychomotor domain was often identified in the procedures that they participated in and what they perceived as learning.

They believed they learned by “doing”: *This clinical session was a great learning session. I was able to observe the nurse pull the sheath of a patient who was post angiogram test [a test to view the coronary arteries of the heart]. I got to take vitals during the procedure* (Journal 118, p. 3).

I feel that I really took some steps in this clinical in applying theory to practice. I got to perform procedures such as injection and giving a bath. I was surprised at how sure I was when I helped the nurse change an occupied bed. I had organized everything we needed and was quite confident and even took charge (Journal 117, p. 11).

An example of learning in the cognitive domain was: *I really loved this clinical experience. I learned a lot about the monitors and found that I remembered what I had learned in first and second quarters* (Journal 109, p. 2).

An example of learning in the affective domain was: *I learned a lot about care of the patient post cardiac surgery. I also found out how it would affect me if a patient died. I did not know if I could handle that part of nursing. Now I know I can get through it* (Journal 109, p. 7).

These learning experiences portrayed an eagerness to be in the clinical setting because the students felt they learned a lot. The day may have started out as anxiety producing but ended up as a gratifying experience. Bill was overwhelmed in ICU (Intensive Care Unit). He felt *out of his element*. Because the nurse assisted him in learning, *it ended up being fun, I learned a lot and feel more confident* (Journal 108, p. 5). I believe that these learning experiences are what motivated the students to learn more and to come back to the clinical setting. *I had a great clinical experience last night, and*

it is not only challenging but fun. I think I am actually beginning to look forward to clinicals rather than being afraid of them. A lot of what I have learned this quarter and past quarters is beginning to make sense (Journal 102, p. 13).

Connecting Theory With Practice

One of the reasons for having students reflect is to provide the opportunity to assist the student in connecting theory with practice. The clinical setting is the place where students can apply theory to real clients and real problems (Reilly & Ommerman, 1992). Through exposure to real-life situations the students were able to grasp the concept of caring for the individual's whole being.

The students integrated the concept of spiritual care: *I appreciate that we talked about the power of prayer in post conference. I truly believe in the power of prayer as mentioned. There are many things you can do with patients if you do not feel comfortable about praying with them, such as listening while they pray. Last night I told my patient that I would remember her in my prayers before I went to bed. I guess a small gesture like that is also therapeutic for the patient as well as myself (Journal 111, p. 8).*

The students also applied concepts of trust and compassion: *It is a shame how some patients can feel lonely and neglected because the nurses or CNAs are way too busy dealing with more than two patients at a time. I think that to be able to spare more than a few minutes to sit and just talk to my patient felt really good. I was able to grasp the concept of compassion and trust with my patient (Journal 115, p. 19).*

Students learned about culture in the care of their patient: *The patient could only speak Spanish. If the patient does not understand his treatment or the rationales behind them, he may not cooperate to the fullest extent, thereby putting him at risk for possible non-compliance. Beside the inability to communicate, the Hispanic culture, I believe, has a need for a man to be very independent and self-reliant. This factor may play a major role in the future outcome of this patient's well-being. I used a CNA to interpret for me, but I wonder if they were understanding me. This experience really taught me a lot about how cultural beliefs are a big part of nursing and a patient's well-being* (Journal 102, p. 17).

Giving the reason for treatments to a patient with respiratory problems relieves anxiety and the feeling of helplessness. *I found the patient close to tears when I entered the room. Upon investigating, I discovered that he wanted his tracheostomy tube out. I explained to him the reason he had the tracheostomy was to ensure that he could breathe on his own, working towards strengthening his respiratory muscle so that they eventually could take the tracheostomy tube out. I think that this really helped him feel better* (Journal 118, p. 10).

Professional Role

The clinical experience provides an avenue through which the student becomes socialized into the profession, its values, and accepts professional responsibility (Reilly & Ommerman, 1992). Some of the students were able to acquire an understanding of the

role and responsibilities of the nurse as a result of participating in and reflecting about the hospital setting.

Becoming a nurse: I am struggling with self-confidence. I can see myself growing, though, and with each clinical experience I find myself falling more and more into the role of the nurse, not Joan only, but Joan as a nurse, and I really am starting to believe I am capable of this (Journal 102, p. 13).

Role modeling: I thought how nice certain nurses are and how I would like to be nice too (Journal 106, p. 11).

Meeting the goals of what the student perceives a nurse doing is exemplified in: I went into nursing wanting to help people, and I feel that I really try to do this. People really appreciate it (Journal 110, p. 113). I cannot wait to move up and be more of a leader in my field. Successful knowledge is so important. It is the key into being the kind of person I want to be! (Journal 119, p. 7).

Summary

In this chapter, I told the stories of nursing students as they learn to problem solve and care for patients in the hospital setting. Journal writing was the method used to assist students to think about their clinical experience. The students gave their perspective of the problems they encountered and the factors that affected them. The themes that emerged from the students' journals were emotions, knowing the patient, collaboration and dialogue, communication, learning, connecting theory with practice, and professional

role. The analysis of the journals by the reflective rubric showed that the reflective process remained consistent during the nine weeks.

The following chapter shares the lived experience of paired nursing students as they worked and journaled together in the clinical setting. The results from the rubric analysis of the paired nursing students' journal will be explained.

CHAPTER 5

THE DATA SPEAK TO ME—PAIRED NURSING STUDENTS

Introduction

Clinical teaching and learning are important aspects of practice within the discipline of nursing. Educators are challenged to explore pedagogical methods that will enhance clinical learning (Tanner, 1994). The instructional method studied in this case study was pairing nursing students in the clinical setting. I focused on the paired students journaling about their experiences when they were involved in problem-solving activities. Journal writing provided the students the opportunity to seek answers, examine alternatives, and assist in the transfer of theoretical knowledge to the clinical practice.

The first part of the chapter includes vignettes of paired students working together in the clinical setting. The purpose of sharing these vignettes is to capture the lived experience of paired students as they learn to work together so that the reader could gain an understanding of this instructional method. The second section of the chapter describes the paired students' ability to problem solve in the clinical setting. Because clinical experience is a complex learning experience, by sharing these written experiences, the reader will be able to encounter glimpses of this complex process. The reader will be stimulated to think about how to meet the challenge of assisting students to problem solve

and to think reflectively in a clinical setting. The last part of the chapter describes the paired nursing students' reflective process over time when examined with the use of a rubric. The purpose is to demonstrate that reflection does increase over time when students dialogue and write together about the problem-solving activities.

Clinical Setting

Student assignments were posted by 4:00 p.m. the day before the clinical experience. The paired students were expected to arrive at the clinical setting together and gather the information about their patients and then develop the care plan based on the information they had obtained.

I would arrive about 20 minutes before pre-conference to review the condition of the patients and to verify that the patients were still in the hospital. Because of decreased patient time in the hospital, there was no guarantee the patient would still be there by clinical time. If the students' patient had been discharged, I would assign a new patient to the students. Sometimes two or all three patients assigned to the paired students were discharged. As the quarter progressed I noticed the nursing students would also arrive early to review charts and material together. They would review the knowledge they needed about drugs as well as ask each other questions regarding the best care for the patient.

The clinical day started at 2:30 p.m. in a conference room at the hospital, which is located about 6 miles from the college campus. From 2:30 p.m. to about 3:00 p.m. (pre-conference time) the students shared care plans they had written from information they

had collected from the chart the night before. During pre-conference time I discussed with the students changes in the patient's condition, skills needed during the shift, and new patient assignments. I answered questions the students had about the patients. These often concerned medications they could not find in the drug books. The first week the students had two patients. I had intended they would care for the patients together, but they split the assigned patients, between the two of them, and it became "your" patient and "my" patient instead of "our" patient which lessened the goals of collaboration. The students did not learn about each other's patient nor feel comfortable working together in the same room. This fortunately started to change during the second week when there was an increase to three patients for a 9-hour period, and students needed to organize care for all three patients.

The rest of the evening proceeded like the unpaired case study in chapter 4. Except in addition to giving me a short report about the condition of his or her clients, sometimes I would have one of the students report to me on all three patients to verify that the students were indeed collaborating together and knew about all three patients.

The last 15 minutes of the post-conference I allotted time for the students to write in their journals and to finish the evaluation section of the care plan. This gave me the opportunity to observe how they dialogued together. Some of the students became more organized with time, and the journals were written by the time they arrived in conference. Two of the groups often stayed after post-conference to write in the journals together. The reasons they gave me for this were (1) the information was fresh in their minds, and (2) one member of the pair lived a long distance away, and they would not be able to

collaborate together the next day to finish the information to hand in to me. We ended at 11:30 p.m.

The Paired Experience

Being paired was a new experience for these nursing students. They had a difficult time explaining to the nurses the reason for being paired. I overheard one student tell the nurse, *It was not because we are dumb, but we are learning to work together* (Journal 130, p. 5).

Being paired did require learning to work together. According to Tuckman (1965), there are four phases in developing and functioning as a group: “(1) forming, (2) storming, (3) norming, and (4) performing” (p. 396). These phases are sequential, but the duration of each phase is dependent upon the reasons the group is being formed and other reasons that may effect the group. For Tuckman’s analysis of the research on groups, the groups consisted of 5 to 15 people. For this case study research I used the definition of groups from cooperative learning: A group is considered two to four people (Johnson et al., 1998).

In the formation phase, the group is developing relationships. Individuals are looking for commonalities and avoiding controversies. The ground rules and boundaries are tested and established. In the storming phase, conflicts of interest appear. There may be control issues, difficulties in communication, wanting to opt out of the relationship, or feeling stuck in the relationship. During this phase there is resistance to becoming a group. In the norming phase, the group is starting to develop collaborative skills and

accepting each other's idiosyncrasies. They are starting to become cohesive. During the performing stage, the group members start to work together on the goals and tasks outlined in phase three. They are feeling more secure with positive and negative emotions in the relationship. In short-term groups the performing phase may not be clearly visible and it may be part of the storming and norming phases (Arnold & Boggs, 1999; Northouse & Northouse, 1998).

Being paired requires learning new skills of organization, communication, and collaboration. I observed Ching and Abe working separately on their 1st day of clinical. There were two handwritings in the journal as they functioned individually and the comments made used "I" statements. *I feel satisfied giving a patient quality care, and I know I did my best doing so* (Journal 120, p. 2). They wrote about the problem in two different sections of the journal. The students were to answer specific questions about the problem-solving process. Question 2 through 5 specifically asked about the problem the students had identified and how they went about solving it. Ching wrote about the problem under question 2: *The medications for M. G. could not be given because she was NPO [could not have anything by mouth] and was sedated. M. G. had a peg tube placement at the beginning of the shift in the special procedure unit. The problem was urgent because she could not have medications due to general anesthesia* (Journal 120, p. 1).

Abe wrote about the problem after answering question 9: *The problem that came up during the shift was that the patient had been NPO for two nights already and had not received any food or liquid. She did not have an I.V. [intravenous fluid] started, and all*

of her medications were withheld. Her mouth and skin were very dry. The nurse finally got the I.V. from pharmacy, and the patient was started on the I.V. fluids. When I left, she seemed to be peaceful and calm, and her vital signs were all normal (Journal 120, p. 2). They seemed to function individually at this point. In post-conference that evening I gave a math problem for them to calculate. Ching and Abe did the math problem separately, and when they came up with different answers, they could not decide who was right.

Ching and Abe were from different Asian backgrounds. I found that the female student always could answer my questions, but the male student had a difficult time. She stated to me that he may have felt intimidated by her because she was detailed-oriented and assertive. As the quarter progressed, their statements indicated that they were starting to collaborate together in the problem-solving process. *The problem we found was that C.L. had a personal care taker and our role as a care giver was being altered (Journal 120, p. 3).* (Students planned ahead how they were going to care for a patient. When they arrived at the hospital unit, this patient had a private duty nurse who was caring for the patient's basic needs. Since this was the first time they had encountered this, it forced them to rethink how they were going care for this patient.) *The resources that helped solve the problems include our partner first and then the RN on duty. Our thinking was influenced by each other. I remembered that nurses need to be aware of both psychosocial and physical aspects of patients when care is being provided. Then we tried to evaluate the patient's spirituality and implement interventions accordingly (Journal 120, p. 5).*

Teamwork has been nice because the other partner can double check your work and recall what you forgot. Two heads are always better than one. You can depend on each other when the other one needs help (Journal 120, p. 14). By the statements in their journal and to me they were able to make it through the storming phase to the norming phase.

Storming

Sometimes students get stuck in the storming phase. Faculty can assist the students out of the “status quo” by being flexible in the “ground rules.” For instance, I expected the pair to collaborate on all three patients, however, in the case of Nora and Rhonda this did not work. Nora seemed to have a stronger knowledge base than Rhonda. Nora was more assertive and took control of organizing the clinical experience. Rhonda had a quieter nature and allowed Nora to do procedures. This caused frustration for Nora. In reading their journal, I found that most of the problems they identified in the clinical setting focused around them, for instance, an RN being rude to them, lack of organization and priority setting, and uneasiness when they changed units. Only the 1st clinical day and the last 2 clinical days did the students write about patients’ problems. Although they stated in their journal, *we influence each other by asking each other questions when we do not understand* (Journal 121, p. 16), through observation I felt they were just tolerating each other. There seemed to be a decrease in the amount of communication time together compared with the other groups, and in the classroom they sat on opposite sides of the room except during collaboration activities.

In collaborating with another faculty regarding my concern about this pair, it was decided that I would deliberately assign a particular patient to each of the students and the third patient the students were to collaborate on this patient's care. The results were that Rhonda's patient was very verbally abusive and confused, and she was scared of him. Rhonda needed assistance and asked Nora to assess the patient's condition. When Nora observed the condition of the patient, she was also afraid to take care of him. Since both knew that the patient needed to be cared for, they collaborated together as to what to do and decided that they were going to team up in caring for this patient. By the end of the shift they were collaborating on all three patients.

The comments in their journal were: *Our strengths were each other and being more comfortable about ourselves and being more aware of our surroundings. We feel as if this was a positive clinical experience. We both feel that having a partnership strengthened our confidence in ourselves as far as our abilities. It was easier to collaborate on paper work to amplify our understanding of what needed to be done and intensify our experience as a team* (Journal 121, pp. 21, 22).

I think what made their relationship end positively was that they were able to focus together on one goal. That goal was that they needed to work together in order to succeed in caring for the patient and overcoming their own anxiety.

Frustrations

Being paired creates frustration within the individual that can be overcome when talking and reflecting together. When setting up the pair, I used the concept of

stratification from cooperative learning by Johnson et al. (1994) and assigned a higher-level student with a lower level student. I hoped that there would be an increase in the lower-level student's knowledge as suggested by Vygotsky's (Cole, John-Steiner, Scribner, & Souberman, 1978) concept of the zone of proximal development. Students were paired together after being classified by Facione and Facione's rubric scale for critical thinking (1996a) (see Appendix A1). This rubric was a scale of 1 to 4. Level 1 represents inadequate thinking by the individual and level 4 represents the individual using critical thinking most of the time. Using this scale I had asked the instructors from quarter 1 and quarter 2 of nursing to rate each of the students. I then averaged the score and assigned each student a score. For the following scenario Becky was a level 4 and Lauri was a level 2.

While sitting with Becky one evening, I asked her how her experience of being paired with Lauri was. Becky was concerned about the inconsistency in her partner. Lauri seemed to "just go do her own thing". Becky would ask her a question, and Lauri just did not seem to know how to answer or to even care to help make a decision. Becky felt that she was not learning anything from this partnership.

Since the paired situation is a reciprocal process, there was no doubt in my mind that Lauri would learn, but I was concerned about Becky. If their zones of proximal development are far apart, would Becky learn? So to assist Becky in her learning development, I told her it is important to keep asking questions, and if she did not get an answer, then she should save the question until I arrived again to the unit then ask again so I could assist her in getting the answer. Throughout the quarter I observed the interaction

between Lauri and Becky. When Lauri did not answer questions for Becky, I would assist Becky in learning the answers.

As the quarter progressed, a comment in the journal indicated that they were working together. *This clinical experience was a very good one because both my partner and I felt as though we were real nurses. We kept busy and were doing things like injections, hanging I.V. bags, and resetting machines* (Journal 129, p. 10).

By mid-quarter when I asked Becky how her partnership was going, she felt that the paired situation was getting better. The benefit of it was that she was able to explain to her partner what information was important in solving a problem. Thus, by talking out loud and reflecting on what she knew, she felt she was obtaining knowledge and understanding of the patients for whom she was caring. In my personal notes I stated that I thought the reason why their partnership improved was because Lauri's knowledge base had increased because she was putting effort into learning; therefore, she was able to add her knowledge to the discussions with her partner. Maybe her learning zone was getting closer to Becky's.

When I interviewed Lauri the last week of the quarter, her comments to me were: *I enjoyed being paired because I learned a lot of skills from my partner. Because I had observed my partner consistently checking the identification band of the patient, I was able to internalize that skill by consistently checking my own patient's identification band* (Journal 130, p. 30).

Error in Problem Solving

Being paired does not always prevent students from making errors in problem solving. This was my concern when starting this project. On May 20 an incident occurred where poor judgement on the part of the students led to an incorrect decision, miscommunication with the RN, and conflict between the two students. The RN approached me and stated that the students refused to come assist him during an episode when their patient had an increase in shortness of breath and needed to be transferred to ICU.

One problem we had was with K. B. She had dyspnea [shortness of breath] especially on exertion. Every time too many people were in the room to attend her, she started getting tremors, becoming anxious, and then her respiration rate would go up. It was a very urgent problem because we needed to do our job, but she would become very short of breath. Mari assisted the patient safely onto the bedside commode and then back to bed. When laying the patient down, I noticed that she started getting nervous. She expressed that there were too many people inside her room (Journal 123, p. 18).

At this point the students should have informed the nurse about the patient's increased nervousness, shortness of breath, and the patient's request for not having two students in the room at one time.

Mari and Tracia went to record their initial assessment, empty a Foley (a bag that contains urine) in the next room, and then they both went back to the nervous patient. When they entered the room, the patient was being assisted by a sixth-quarter nursing student. When the patient saw Mari and Tracia, she said angrily, "I do not want you to

be around here” (Journal 123, p. 18). The RN entered the room and asked for assistance, but the students took the statement made by the patient literally and stood just inside the door. The nurse then asked Tracia to go to the pharmacy for medication that was needed, and Mari left the room because *she needed to take care of her own personal needs* (Journal 123, p. 18).

Upon returning to the room, Mari thought she overheard the nurse say: *“There is a student nurse in here who is very uncooperative. Her name is Marcy* (a name similar, but not really her name). She went closer and heard him continue to say, *“Remember, her name is Marcy.”* Mari felt that *his remarks were not only unkind and offensive but also out of character for a nurse* (Journal 123, p. 20).

When Tracia came back from the pharmacy with the medication for the patient, the nurse asked Tracia and Mari to help transfer the patient to the intensive care unit. He suggested to them that they stay in the intensive care and observe the patient being intubated (a tube placed into the trachea to provide an airway for a ventilator to be attached). Mari was so upset at what she thought the RN had said in the room, and Tracia was afraid of what had just occurred with her patient that they did not want to stay. So they came back to the unit to care for their other patients.

This was when I arrived in the unit, and the RN told me about what had happened. It took an hour to sort out the stories. In talking with the students, I tried to help them comprehend the relationship between signs of hypoxia which causes agitation and the statement made by the patient, “I don’t want you in here.” The students could tell me the signs of hypoxia but had difficulty in making the connection between what they knew and

what they had seen. Part of the problem was that Mari was upset by the statement she thought she heard the nurse say; therefore, she was having difficulty thinking about the problem from a different viewpoint. Tracia was able to make the connection but was unable to help her partner in contemplating the importance of critically thinking through a situation from the RN's point of view as I was asking them to do. I ended the discussion with the request that they journal that evening from the nurse's point of view in problem solving.

This incident created conflict between the partners. Up until this point they had been working well together. I had observed them collaborating on various problems and in their journal they made "we" statements. *We were quite organized in giving care to our patient and attentive to the nurse's instructions. We asked a lot of questions about the nurse's actions, treatment, and the reasons behind them. We learned more about caring for a patient that is total self-care* (Journal 123, p. 15).

When I received their journal, Tracia and Mari had written separate accounts of the experience. Tracia was feeling bad that she was unable to assist her partner in overcoming the miscommunication problem that occurred that evening.

This was Tracia's comment: *My thoughts and feelings about this experience are very scary. Yes, I wish we could have learned more about the technical aspects of what is going on in the hospital setting, but then we did learn the importance of good communication. I feel really bad about miscommunication occurring. I hope next time I run into a situation like this I will know what are the best steps to perform and what should be said at the right time. What I mean is I hope I have learned from this*

experience so that next time I can take the right actions to help my patient, the nurse, and my partner (Journal 123, p. 18).

Mari ended her journal with a defensive statement: "It was the RN's fault." Since I had asked them to journal this problem together from the RN's point of view, I asked them to rewrite the situation again. Mari still refused to write with her partner, but she did rewrite the problem-solving steps correctly and left the blame out of the problem. Tracia's statement, which assisted her in solving a problem the next week, was: *The knowledge we needed was to know the signs of hypoxia such as shortness of breath, restlessness, tachycardia, tachypnea, and cyanosis. Our patient was experiencing these symptoms. Other knowledge we needed to know was what to do in this kind of situation. The first thing would be to calm ourselves, then hold the patient's hand and tell her, "I know you are distressed and I am here to help you," then ask the patient to take slow deep breaths, and then place the oxygen on or turn the oxygen up (Journal 123, p. 26).*

The next week the students were faced with a patient who exhibited shortness of breath. When reading the journal, I realized the importance of encouraging the students to reflect on their previous experience. *The problem that arose during the shift occurred while a newly admitted patient started experiencing worsening signs of shortness of breath. Her lungs sounded more wheezy with fluid as time went by, and her oxygen saturation dropped to 72 percent on room air. Even with the nasal cannula oxygen running at six liters, she was still saturating at 85-86 percent. The problem was very urgent, and it was an emergency problem. The knowledge required for us to solve the problem was derived from previous experience with a hypoxic patient and lessons from*

Fundamental Class on signs of hypoxia. While the RNs were trying to get a hold of the doctor, I sat and held the patient's hand while trying to keep her calm and encourage her to take slow, deep breaths. I accompanied her to ICU where she was monitored and given antihypertensives. My partner assisted me by caring for the other patients while I took the patient up to ICU. Overall, it was a good learning experience (Journal 123, pp. 20, 21).

Because the students had reflected on the problem that happened the previous week, they were able to communicate with each other and with the nursing staff. Since the students had recorded their previous experience making connections from theory to practice, they were able to take action. In rereading their journal, I realized students can learn from errors when they have reflected on their experiences.

Mari and Tracia were able to move from the storming stage to the norming stage when they started to plan how to strengthen their partnership. *We need to better communicate about what is going on with our patient. One of us will review the doctor's orders throughout the shift so medications and treatment that are added will be given (Journal 123, p. 32).* In the last journal statement of the quarter, there were two handwritings and the “we” statements were included. *Our strength for this clinical experience was giving good care for our patients and getting all of our work done on time (Journal 123, p. 32).* In interviewing Mari before she finished the class, she stated that she had learned a lot this quarter and she really enjoyed working with her partner. This indicated to me that she overcame the conflict.

Increase in Self-confidence

Being paired together increases confidence in the clinical setting. According to Johnson, Johnson, et al. (1998), some of the outcomes of cooperative learning are academic success, assisting students to adjust socially to college, and increasing self-esteem in the individuals.

Michael wrote how he felt that being paired assisted him by increasing his self-confidence. *This quarter is much more complex for me scholastically as well as socially, and sometimes I do not think I am going to make it, but this teamwork partner program this quarter makes me feel much more productive and confident in myself* (Journal 124, p. 7).

Matt and Carol commented on how being paired increases confidence in performing procedures, decreases anxiety, and enhances learning from each other. *Matt and I are working well together in the clinical setting. Neither one of us is very dominant in personality so that aids in our working together. We are able to keep better track of the three patients. It is stress-relieving to not being alone in the situations, and we are learning from each other* (Journal 128, p. 8). *We are more confident in our ability to take care of the patients. We are confident in giving medications, doing intake and output, giving comforting measure, working well together, and giving prn medications* (Journal 128, p. 17). Being paired together has brought benefits to most students as they work together in an active environment.

Teamwork

One of the reasons for pairing the nursing students was to provide an environment to practice collaboration and team work. Collaboration is not a natural process (Gerace & Sibilano, 1984), but remarks written in the journals were quite positive. Diane and Rogenia made the following statements.

I feel very lucky to be paired with Diane. Diane makes sure that I follow through with treatment and procedures in a timely manner. Having a partner like Diane helps my clinical learning experience.

Now it's my turn! It was great having partners this week. It makes the clinical experience much more educational and enjoyable (Journal 122, p. 3). By learning to work together as a team, treatment, procedures, and other activities were completed on time. Second, by working as a team, the students felt their learning was enhanced.

As the quarter progressed, the paired students felt that teamwork had become their strength in caring for their patients. *Our strengths were that we worked together on caring for the patients, and when any questions arose, we were able to assist each other in obtaining the answers. Our teamwork is still going strong. We depend on each other a great deal, and we collaborated well on care plans, medications, and procedure (Journal 121, p. 12).*

Communication

One of the major elements in health communication is the interaction that occurs between individuals as they communicate health information (Northouse & Northouse,

1998). The results of being paired together strengthen communication which is an important element in teamwork. Becky and Lauri commented in their journal: *We were also able to work together at a higher level because of the better communication we have learned to do* (Journal 129, p. 6). As the quarter progressed, communication continued to be a strength for Becky and Lauri not only with each other but with the patients and staff. *We believe that our strengths include good communication with each other, as well as our RNs and patients* (Journal 129, p. 9).

The Clinical/Nursing Experience

The clinical experience provides the opportunity for students to start thinking like a professional. Nursing, like other professions, practices from a problem-solving perspective as opposed to a task-oriented perspective. “The clinical practice experiences enable the students to minister to real clients in the management of real problems inherent in their practice” (Reilly & Ommerman, 1992, p. 10). Problem-solving activities are essential in individualizing a patient’s care and are important in assisting the learner to develop discrimination skills when faced with ambiguous choices (Reilly & Ommerman, 1992).

Nursing developed a framework of logical steps that are relevant to holistic nursing care. The framework is comparable to the problem-solving process. This is the framework the students were taught to use when solving problems. The four steps with their descriptive components are:

- | | |
|----------------------|----------------------------|
| 1. Assessment | Problem recognition |
| | Data gathering |

	Data analysis Nursing diagnosis
2. Planning	Desired goal setting Priority setting Selection of intervention measures
3. Implementation	Carrying out of nursing actions Formative evaluation of actions Change as indicated
4. Evaluation	Relationship of outcomes to defined goals Consistency of actions in process phases with Pre-determined criteria and standards of care Influence of structural variables on outcome and process. (Reilly & Ommerman, 1992, p. 61)

The following is a description of the problem-solving process as reflected in the writing of the paired journals and my personal notes. Included are factors that enhanced or deterred the students' problem-solving ability.

Problem-Solving Process

Because much of the learning and practice of nursing in the clinical setting involves problem solving, deliberately developing questions for the students to cause them to “stop and think” is an attempt at increasing levels of reflection. Dewey (1933) parallels problem solving with reflective thinking because the individual must become aware that a true problem exists and then reflect on the problem in order to make meaning and to provide a course of action in solving the problem. The following is an example of using the four steps of the nursing process.

From the research that we did the night before we had identified that the patient would have pain after surgery. When we arrived at the hospital unit, the patient had

already received Demerol for pain but stated that it was not relieving her pain. We asked her to rate the pain level, and she was 9½ on a scale of 1 to 10. We consistently monitored the patient's pain level while on Demerol. We listened to her comments about morphine being more effective for her the last time she had surgery. We researched into her suggestion about morphine by looking at the chart and at the drug book. We talked to the RN, and she contacted the physician. [Students cannot contact the physician at this level]. We received approval for an order of morphine, and we administered the pain medication. Her pain was relieved (Journal 129, pp. 7, 8).

As part of preplanning for care of this patient, the students had identified that pain would be a problem after surgery. Since relief measures were ineffective, they further investigated the problem on how to decrease the pain for the patient by talking together to decide what needed to be done. To them it was not an urgent problem, but with the increased pain level to 9½, they considered the alternatives, which included listening to the patient and then took action. By writing about the problem, the students were able to reflect on the decision that they had made and come to a consensus that it was a good decision.

When first exposed to writing about the problem, some students were very brief in their description of the problem. The following is from Deborah and Jim's 1st clinical day. *The problem: Deborah's patient had decreased circulation related to reduced cardiac output. The nurses were aware of it at the beginning of the shift, but nothing was done until near the end of shift. The knowledge we needed was correct positioning of a patient. The nurse told us the best position in which to place the patient. We placed*

pillows and propped the patient's legs (Journal 127, p. 1). I had written in their journal that the nurse performed more activities than what they had written about, therefore the students needed to think about solving the problem of decreased circulation in relationship to what the nursing was doing for the patient. Because the description was short, I could not tell by their journal how the problem was solved because they included only one intervention for decreased circulation, and there are many more activities important for a patient exhibiting decreased circulation.

As the quarter progressed, there was an improvement in Deborah's and Jim description of the problem. They were able to use the knowledge they had learned in class, and with the use of dialogue they were able to solve the problem. *The patient was experiencing pain from the I.V. site. We checked the site and the I.V. was "flopping around" because the I.V. tubing was not taped well. The tissue around the I.V. site was filling with fluid and was hot to the touch. It was the change of shift, and nobody wanted to take care of the problem. The problem was fairly urgent because of pain and the arm filling with fluid. We had learned in class about I.V. infiltration, and we could tell the needle was not in the right place causing the fluid to go into the tissue. If the I.V. was left like it was, it could cause many problems to the tissue. We told the nurse and when he checked it he agreed with us, but it was the change of shift and so the I.V. was not taken out. Because we could not discontinue the I.V. on our own, we contacted the instructor and she assisted us in stopping the I.V. and removing it. Then the next shift's nurse came and started the I.V. again* (Journal 127, pp. 10, 11).

The students had gained enough confidence in their knowledge and in their ability to solve the problem when the RN did not respond to them. With the knowledge they knew, they contemplated the consequences of leaving the I.V. so they took action by contacting their instructor.

The first journal question—Looking back, do you think that the problems that you identified were the most important ones for the patient? What additional problems do you now identify as the result of caring for the patient?—was intentionally written to lead the students into the evaluation step of the nursing process. The students gathered data the night before and identified problems that might arise in preparation for caring for the patients. The following is an example showing progression in evaluation for the original nursing diagnosis to the “new” nursing diagnosis.

The nursing diagnosis chosen from V.L. was increased risk for impaired skin integrity. The diagnosis seemed to be an appropriate choice. Other possible nursing diagnoses could be pain, related to status postoperative total knee replacement, and activity intolerance due to limited range of motion (Journal 124, p. 1).

By the 5th week the students included with their nursing diagnosis the reasons for their original nursing diagnosis and the new nursing diagnosis. By including these reasons, they were demonstrating an increase in thinking beyond just identifying the problem. *For S. D. the nursing diagnosis was impaired mobility. This was an appropriate diagnosis. She was unable to perform activities of daily living, and had extreme difficulty with ambulating. Client was short of breath and unable to lift her own legs out of the bed due*

to her morbid obesity. The client had a myriad of problems related to ankle leg edema and the inability to ambulate without assistance.

For N.N. the nursing diagnosis was pain. This may have been a priority last night; however, today the client seemed to be pain-free. She was somewhat disoriented and forgetful. To address this need I conversed with the client numerous times and reoriented her. She asked four times why her urine was red.

For H. M. the nursing diagnosis was constipation. Today the client had a bowel movement. How quickly things change in 24 hours (Journal 124, p. 10). In analyzing the responses to the journal questions using criteria A, the paired students were quite consistent from week 1 to week 9 in explaining their problem-solving processes (see Appendix A4 and A9).

Barriers to Reflection

Sometimes there are barriers that prevent the student from further progressing in the learning experience or even identifying that there is a problem. Boud and Walker (1993) define barriers as “those factors which inhibit or block learners’ preparedness for the experience, their active engagement in it, and their ability to reflect rationally on it with a view to learning from it” (p. 80). These barriers limit the learners’ awareness of the learning environment, can cause them to fail to focus on the knowledge that is needed in the problem-solving process, or can paralyze the learner to even actively perform in the situation.

Barriers can be external such as people, hostile environments, culture, or written expectations; or internal such as negative emotions (anxiety, anger, or fear), lack of awareness or unconscious oppressed behaviors (Boud & Walker, 1993). Whichever type of barrier, it can create non-reflection in the learner, and learning does not take place (Mezirow, 1991).

The following statement from Nora and Rhonda's journal demonstrates how people and a hostile environment can act as a barrier to learning. *Upon arriving on the floor, we get the report first thing from the assigned nurse; however, the first patient whom we decided to see had a busy nurse at the time so the CNA [certified nursing assistant] gave us the report. As we were assessing the patient, the assigned nurse came in, and in a lecturing, upset tone, told us never to do that again without seeing her first. After we were done, we went to get a report on the other patients. Searching for the nurse, we found the nurses in a meeting and were abruptly told to wait. At this time, we had medication to be given and charting to be done on the previous patient, but could not get to the charts because the meeting was going on.*

We were influenced by not being able to get our things done for our patient and failing the lab. [The students felt that if they did not get their work started on time, the instructor would fail them for lab.] We would like to have been more knowledgeable so that we would know what to do in certain situations. For a while we felt really belittled by the way some of the nurses were talking to us (Journal 121, pp. 3, 4).

The students did page me, and when I arrived on the floor, they had stopped doing all activities—not knowing what to do. Nora was very anxious about the way she thought

she had been treated. She was concerned about failing lab. Neither one of them could supply a possible solution to the problem they were facing. As a teacher I was able to “soothe” their fears and intervene on their behalf in order to get them working again. In my journal that evening I noted the patient’s blood pressure was elevated, and we had to problem solve together regarding the patient’s blood pressure. I wondered if they would address this problem in their journal. Because of the high anxiety they faced on the unit, this problem was a higher priority for them than writing about the high blood pressure of their patient.

However, the students did overcome their anxiety and the next week Rhonda and Nora wrote: *We enjoyed tonight’s lab because we were more experienced; we had a lot to do so time went much faster than the first two weeks. We were more comfortable with the unit and the staff. All our patients were awesome. Our strengths were collaborating with each other and were not afraid to ask anyone for help or assurance with the treatments and procedures we had to be doing* (Journal 121, p. 9). The students were able to relax and start problem solving together.

Emotions/feelings

Emotions take on different forms in the clinical setting. They can be negative or positive. As I stated above, negative emotions are barriers to reflection and problem solving. Negative emotions can create low self-esteem or the inability to think when problem solving. Positive emotions create a catalyst for reflection. They help the

individual focus on the event and see it more sharply (Boud et al., 1985). Positive emotions serve to create the avenue for new learning to occur.

We enjoyed clinicals today. The biggest blessing we got out of this clinical experience is from a 92-year-old patient who insisted on walking again after her stroke. She prayed with us which gave us a lesson. As long as you have the will, you can overcome the problem. The amount of faith that she exhibited gave us courage to not give up on hope and dreams. She gave us a lesson in spiritual care (Journal 120, p. 6). Because of the pleasantness of the experience Ching and Abe were open for learning.

Although students journaled together, sometimes one of the partners would make personal statements. The following statement is important because the student acknowledges her partner as part of the wonderful experience. She also acknowledged the instructional method that is helpful in her learning. Crystal talked about her positive experience in clinical. *I had a wonderful experience tonight. As usual, my partner was pulling his weight, helping to fill in the gaps, and pointed out needs that required attention. Rita [the instructor] was helpful in directing patient care. I enjoyed her instructional assessment and assistance with the glucoscan. She did not tell me every step, but allowed me to act and answered question *pm* [when necessary] (Journal 124, p. 14). Because of the positive experience, the student could figure out what she is learning.*

Connections

Being able to connect previous experience or previous learned knowledge/theory from class is a goal in making reflection a part of the individual's learning experience.

Being able to make the connections or links becomes a part of the reflective process. From this process old knowledge gives way to new knowledge and ideas (Boud et al., 1985).

Last night after a review of the chart Michael and I thought pain would be an apt nursing diagnosis. After I thought about it at home, I decided fatigue would be better because the patient's pain level would not be a priority as evident by the fact that she was receiving pain medications infrequently. The order is written prn for Versed and Morphine Sulfate. Further consideration led me to the nursing diagnosis of fatigue. This was applicable and a better choice than pain. But, low and behold, after we observed the patient, the diagnosis that better suited the patient was actually anxiety related to her inability to communicate as evidenced by placement of a new tracheostomy tube. This was a perfect example of how conditions evolve and new adaptations can be made to suit the changes (Journal 124, p. 19).

Because of the process of reflection, Crystal and Michael were able to evaluate what they had written and what they were observing while caring for the patient. They were able to link this process to nursing process and the way patients change through the course of their stay in the hospital.

Discussing the different alternatives for the care of the patient helped the students care for the patient in a different manner than they might have expected. Carol and Matt were caring for a patient in the intensive care unit who had a tracheostomy tube with a ventilator and who was completely dependent on the nurses for her care. This was a new experience for the students, and they reflected on what they had learned regarding spiritual

care and maintaining the patient's identity while caring for a patient. *After talking to the patient, we discussed that we hope that we will not make the patient feel ignored or feel like her care or treatment is less than is to be desired. We did pray with the patient and actually communicated with her instead of just treating and caring for her all day. That is another kind of care we are very sure of* (Journal 128, p. 11).

Dialogue and Learning

It is my assumption that dialogue is important in problem solving and reflection which leads the student to learning. Freire (cited in Kolb, 1984) talks about the importance of dialogue in reflection.

Human existence cannot be silent, nor can it be nourished by false words, but only by true words, with which men transform the world. To exist, humanly, is to name the world, to change it. Once named, the world in its turn reappears to the namers as a problem and requires of them a new name. Men are not built in silence, but in word, in work, in action-reflection. (p. 31)

Candy, Harri-Augstein, and Thomas (1985) call this process of dialogue with reflection—learning conversation. They felt that reflection “often begins with someone talking over his or her ideas with another person and using them as a ‘sounding board’. In everyday language we talk about ‘thinking out loud’” (p. 102).

This learning conversation is illustrated by the following statements: *We influenced each other's thinking and got feedback from one another. Every time we came to a problem we reminded each other to think carefully about what we should do. After we cannot figure out what to do, then we would ask the nurses and review our procedures* (Journal 120, p. 18).

Before asking our instructor for a solution, Diane and I consulted with each other to identify consequences of our options (Journal 122, p. 16). These statements demonstrate a mature ownership of the learning process. The students believed they were better off trying to solve the problem first between themselves before asking the nurses or the instructor.

We planned out our care for both patients and discussed our progress frequently throughout the evening (Journal 124, p. 3). In my journal I had noted that Michael and Crystal were discussing their journal together when I made rounds during the evening. This shows that their reflections began with learning conversations with each other.

Dialogue also included the students talking with the nurse to learn more about charting and organizing their time. *We had also some interesting conversations with the nurses regarding organization and patient charting. This quieter time during the shift offered more time for conferring with the nurses* (Journal 124, p. 3). With the use of dialogue, students were able to problem solve and reflect together on their thoughts and feelings while in the clinical setting.

Caring

Learning to “care” is important in the problem-solving process. “Educational theories from the humanistic sciences, theories of ethics, and theories of the phenomenon of care are now cognitively studied and incorporated into the problem solving and experiential components of learning” (Reilly & Ommerman, 1992, p. 48). Davies (1995) in her study indicated that the reflection assisted students in focusing on patients’ needs.

The theme caring was integrated into how the students attended and solved problems for their patients.

As the result of caring for the patient, the student could see changes in the patient's behavior. *The additional need that was identified for H.M. was psychosocial. Basically, the patient needed someone to talk with as she was likely feeling lonely or out of sorts due to her hospital stay. I tried talking with her whenever I could, even if it was a momentary check in and a quick hello. I noticed an increased change in her spirits* (Journal 124, p. 4).

Disorganization creates frustration in meeting the goal of caring for the patient. *We felt we should have spent more quality time with each patient than we were able to. If we could spend more time with each patient, we would be able to write up a more comprehensive assessment of the psychosocial and spiritual aspects of our patients* (Journal 122, p. 5). I had discussed with Rogenia and Alisa about their disorganization and their feelings of frustration in meeting the quality care of the patient. Because of the dialogue and their reflections in their journal, they were able to organize themselves the next week to provide the care they felt the patients needed. *We felt we were more on top of the prn drugs and request from our patients. NOBODY DID WITHOUT!* (Journal 122, p. 10).

While Matt was caring for a patient, the patients influenced the student's perception of him. *My patient surprised me when he said that he was a deacon and happy. He had missionaries and family visiting him all the time. He knew he was loved and cared for. Even with the loss of his leg he was still useful and could live a normal*

life (Journal 128, p. 7). The impact of meeting the patient left an impression on the students' lives so much so that the students wondered how the patient was progressing. They were very happy to see the patient again. *One really special thing happened. Cheri's patient, who was discharged, was Matt's and my patient from a few weeks ago. He was really sick when we had him, and I have thought of him several times, and it was so great to see him sitting in the wheelchair on his way home. He was doing well* (Journal 128, p. 17).

Professional Role

One of the goals of clinical experience is for students to learn the professional role of the discipline of nursing. Students do observe how nurses practice and react in caring for patients and how they collaborate with other health personnel. Although observation may be considered a passive activity, the use of the journal writing turns this passive activity into an active learning process. By actively thinking about the nurses' role, the student can incorporate this knowledge into his or her own learning activities.

Registered nurses are considered to be a role model by the students. Crystal and Mari had inquired from the nurse about how to get an order of Tylenol from the pharmacy. After conversing with the nurse, the nurse realized that she had already charted the Tylenol but had forgotten to give it to the patient. The Tylenol was given to the patient by the students. Their comment about the incident was: *RNs do make major mistakes, and we learn from what they do and what they do not do* (Journal 123, p. 5). I suspect the students were surprised that RNs do make mistakes, but they learned the

importance of following through on a normal action a nurse performs and not to let distraction lead them to making a mistake.

The role of the RN is to be a facilitator of respect for each level of health-care worker working with the patients. Rogenia overheard the CNA complaining about her to the RN. The two individuals were talking in a language other than English, and Rogenia understood the language, but the RN and CNA did not realize this. Rogenia was upset because the RN seemed to support the complaint of the CNA but did not directly communicate the complaint to Rogenia. We talked with the group about this incident in post-conference giving time for the students to reflect on solutions to be given to Rogenia. This discussion seemed to relieve the angry feelings that Rogenia was experiencing. Rogenia's comment in the journal was that *it is important to respect each other and each role in this field and to be able to let go of hard feelings—to be professional* (Journal 122, p. 12). I think when Rogenia becomes a nurse, she will remember this incident and treat each member of the profession with respect.

The role of the nurse is to meet the needs of the patient. By reflecting about the role of the nurse, Crystal and Michael made connections between a competent nurse and identifying the needs of a patient. *The best part of the shift was meeting N.N.'s spiritual needs. Being a good nurse requires competency and a megadose of caring for patient's psycho-social and spiritual needs* (Journal 124, p. 14).

Process of Reflection

“Reflection is an important human activity in which people recapture their experience, think about it, mull it over, and evaluate it. It is this working with the experience that is important in learning” (Boud et al., 1985, p. 19). Exposing students to an experience does not equate it with a learning experience. Unless students are actively involved in the learning process, learning will not take place. According to Boud et al (1985), it takes active reflecting to benefit an individual’s learning from experience. Reflection is considered a process and can be intentionally taught (Boyd & Fales, 1983). Therefore, as an educator, I assigned paired nursing students to write in a journal together. My assumption was that talking and journal writing together would increase their level of reflection, which in turns leads to additional learning. The following are the questions (see chapter 3 for reasons for questions and explanation of the reflective score) answered by the students in their journals; included is the criteria and in brackets the stages of reflection for each question:

1. Looking back, do you think the problems that you identified were the most important ones for the patient? What additional problems do you now identify as the result of caring for the patients?

Criteria: Identifies other related problems which may include reasons for the problem. (Integration)

2. Identify a problem or a need that arose during the shift. Explain the circumstance of this problem including whom, what, when, where, and how urgent was the problem?

Criteria: Explains reason for urgency or lack of urgency. (Integration)

3. What knowledge was required for you to solve the problem?

Criteria: Identifies connecting piece of information needed. (Association)

4. What resources helped you to solve the problem?

Criteria: Recognizes personal resources as a resource.

5. What steps did you take to help solve the problem?

6. What influenced your thinking about this problem?

Criteria: Uses internal reason to influence thinking. (Association)

7. What were your strengths for this clinical experience?

8. What were your weaknesses and tell how you will strengthen these weaknesses

the next clinical experience? (Validation)

Criteria: Explains how to improve on his or her weakness.

9. What were other thoughts and feelings about your clinical experience today?

Criteria: Expands reasons for thoughts or feelings noted from the experience.

(Attendance to Feelings and Validation)

In order to determine the presence of reflection, I developed a rubric (see Appendix A4 and chapter 3) that assessed for the reflective elements of the questions that were asked. There were 9 questions the students were asked. Seven questions were given a reflective score of 1 point each making a total reflective score of 7 points. Each pair was given a reflective score based on the analysis of their answers of the questions. The mean was then calculated for the ten pairs for each week during the clinical experience (see Figure 2 and Appendix A8). A simple linear regression analysis for change was

performed. There was a significant increase ($p < .01$) in the level of reflection across the nine weeks (see Appendix A10).

To assist in understanding which questions were answered more frequently, the percentage of the 10 pairs answering reflectively was calculated (see Appendix A10). The first week the percentage for each question was: question 1 at 43%, question 2 at 43%, question 3 at 28%, question 4 at 0%, questions 6 at 43%; question 8 was 43%; and

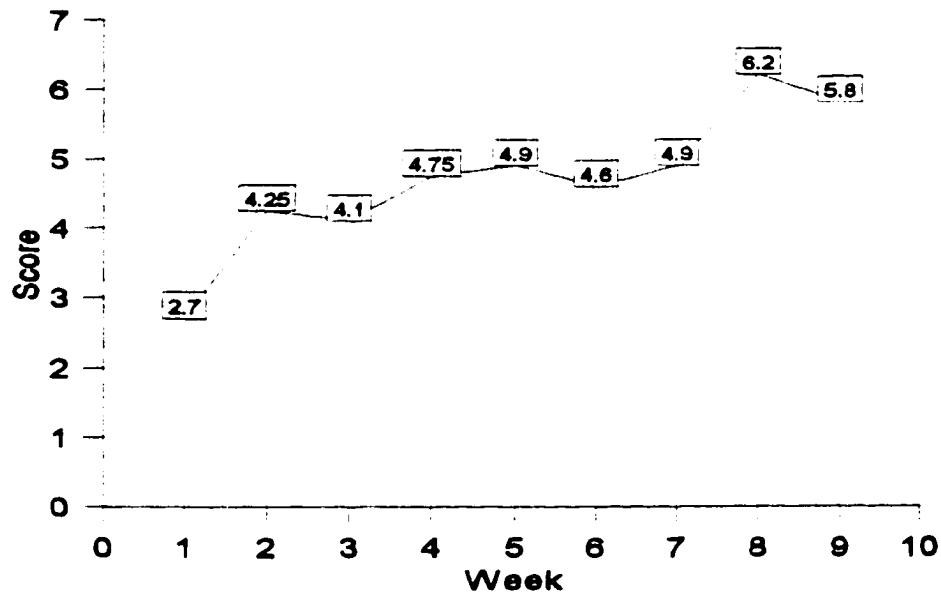


Figure 2. Mean weekly reflective score of paired students over 9 weeks.

question 9 was 0%. By week 8 (the highest mean reflective score) the percentage of answered questions was: question 1 at 100%, question 2 at 100%, question 3 at 80%, question 4 at 80%, question 6 at 80%, question 8 at 100%, and question 9 at 80% in answering the questions reflectively. The greatest increase in reflection was in questions 4

and 9. This progression of an increase in reflective scores indicates to me that when students dialogue together in writing a journal, there is an increase in reflection over time. To evaluate the questions that the paired students may have had difficulty in reflecting upon, the averages of the percentage for the 9 weeks were calculated. Questions 3 was 52%, question 4 was 47%, and question 9 was 46%. One of the reasons the paired students may have had difficulty with questions 3 and 4 maybe due to not recognizing each other as a source of knowledge. The concept that the partner has knowledge to share was new to the students. The possible reason that question 9 was lower maybe the fact that the pairs talked with each other regarding their emotions which may have satisfied their need to share with someone and, therefore, the thoughts and feeling were not explained in written form.

Summary

The clinical setting is an important environment in which students learn to problem solve and to think critically as a part of becoming a professional. The methods used were to pair students in the clinical setting and to have them write about the problem-solving process. This helped the nursing student to think reflectively. Although being paired created frustration and conflict between partners, students were able to move on to the norming stage. Students stated that working together increased their self-confidence and strengthened their teamwork and communication skills. Themes that developed as the result of reflecting about their problem-solving process were barriers to reflection,

connections made between theory and what was observed, dialogue and learning, caring, and professional role.

If students are to learn how to reflect, it must start early in their education (Boud et al., 1985). When paired nursing students were exposed to the reflective process specifically aimed at problem solving, there was measurable growth in their reflective process over the nine weeks.

Chapter 6 will describe the themes that were present across both case studies. The secondary purpose of this study will be discussed. Suggestions for applying what was learned from this study will be given and recommendations for further study will be discussed.

CHAPTER 6

CROSS-CASE ANALYSIS, RECOMMENDATIONS, AND CONCLUSIONS

Introduction

Nursing education, like any other professional education process, needs to develop tools to assist the student in thinking, whether in the classroom setting or the clinical experience. “Neither the hand nor the mind alone would amount to much without aids and tools to perfect them” (Bacon, 1623, cited in Brown, 1994, p. 4). This task is not always easy, but developing tools supported by theories can assist students to be active constructors of knowledge within their educational experience (Brown, 1994). In this case study, that is what I set out to do—develop tools that will assist nursing students to reflect on problems in the clinical experience. I endeavored to do this by having the students journal in response to focused questions related to problem solving. Because I wondered if collaboration and journal writing were “tools” that might influence reflection and problem solving, I set up two different scenarios: (1) clinical nursing students using journals as individuals and (2) clinical nursing students functioning as pairs both on the hospital floors and in the reflective/journaling process. In this chapter, I answer the

research questions by describing how the two case studies are alike and different in the use of reflection as a critical component of the learning process.

The Clinical Experience

In this section, I answer Research Question 1: How does the journaling process influence reflection on problem solving in the clinical setting?

With the belief that problem solving, reflection, and critical thinking are related, I implemented journal-writing strategies with unpaired and paired nursing students to promote these processes. In the following paragraphs, I describe the expected and unexpected results of the case studies I observed.

Emotions

One of the first things I noticed in the case study where students functioned both on the floor and in journaling as independent individuals was the high anxiety level on the 1st day of the clinical assignment. Repeatedly, anxiety, fear, intimidation, and overwhelming feelings of doubt were described in the unpaired journals. Over the 9-week period there were 46 expressions of emotions stated in the unpaired journals. Fifty percent were classified as negative, and the other 50% were classified as positive emotions. In my personal notes while studying the unpaired group, I wondered if there would be less anxiety or negative feelings in the paired group. When reviewing the writing of the paired students' journals of the 28 expressions of emotions, 30% of the comments were negative. Students exhibiting anxious feelings was not new to me. I have observed it in previous clinical experiences. It is documented in research studies in nursing

that anxiety in students is present in the clinical setting (Chamberlain, 1997; Eler, 1995; Oermann & Standfest, 1998; Wilson, 1994).

The relationship between emotions and the ability to think is described by Goleman (1994). When an individual is in a good mood, it enhances the “ability to think flexibly and with more complexity, thus making it easier to find solutions to problems, whether intellectual or interpersonal” (p. 85). The opposite is true for “bad moods.” Moods such as moderate to high anxiety, fear or rage shut down the thinking processes of the brain and impede the intellect. Negative emotions (bad moods) then become barriers to learning (Goleman, 1994). Caine and Caine (1997) calls this process “downshifting” of the brain. According to Boud and Walker (1993) there are two key factors that help an individual overcome barriers to learning which negative emotions create. These factors are previous experience and assistance from another individual. Perhaps this explains why there was a decreased amount of negative emotions in the paired students’ responses. The paired students felt support from each other and were able to describe their feelings to each other. This explanation was supported by a comment from Diane and Rogenia. *We supported each other. When we thought things were getting rough during a shift, we would take a breather and talk about it and what would be the best way to approach the problem* (Journal 122, p. 18). Carol and Matt also stated: *It is stress relieving not to be alone in the clinical setting* (Journal 128, p. 8). Crystal particular noticed the difference when she was working by herself when her partner was sick. *I’m feeling a little lonely tonight with out my partner. Bouncing ideas off each other is fun and helpful. Working with Michael is good because we check each other and cover needs that might otherwise*

go unmet temporarily or at all. I will look forward to working with Michael next Wednesday (Journal 124, p. 9).

One of the benefits of paired collaboration is the affective effect that develops. Through shared experience, students are more likely to identify with and support each other. This appeared to happen in the paired situation. Tracia and Marie represented this decreased anxiety in their statement: *Working with a partner makes learning more fun and less stressful* (Journal 123, p. 9). For Crystal and Michael, *teamwork created a positive reinforcement for each other* (Journal 124, p. 13). The process of journaling and working together decreased negative feelings in an intimidating environment. These comments connect with Johnson, Johnson, et al.'s (1998) description of increased psychological health and self-esteem when students are working together in a learning environment.

Dialogue

Dialogue in a social environment was important to both unpaired and paired students. In the unpaired case study, the students appreciated their fellow students more when they could dialogue with them in problem solving. Dialogue with the nurse was equated to learning if the dialogue was beneficial. To Kathy talking with the nurse helped her to gain knowledge and to feel comfortable in contributing her own thoughts: *The nurse and I had a long talk about comfort care and keeping the patient comfortable. I really enjoyed talking to her and gaining her knowledge, thoughts, and being able to contribute my thoughts to the conversation* (Journal 101, p. 4). For Steve talking with the

nurse helped him learn many nursing activities. *The nurse Ann was extremely helpful. She took time to help me out and taught me a lot of new procedures* (Journal 104, p. 2). If the dialogue, however, was hostile or the student felt he or she was in the way, the student did not perceive that she or he had learned or communicated well. Linda wrote: *I had a hard time communicating with one of my early shift nurses. She seemed to ignore me and gave me the impression that I was in the way. So I got timid around her which I shouldn't have* (Journal 106, p. 10). This student was normally quite talkative in class and very inquisitive, being unable to communicate probably decreased the opportunity of learning through dialogue. In my personal notes, I noted that students from the unpaired group would rather talk with each other at post-conference regarding activities of the evening than write in their journal.

For the paired students, dialogue early on was important in solving problems. First, students preferred to talk with each other before discussing the issue with the nurse. Ching and Abe wrote: *When we came into the problem we consult our partner first then with the RN or Rita [which was me]* (Journal 120, p. 4). Abe and Ching wrote this statement on the 2nd week of the quarter. They used each other as resources for knowledge needed in solving the problem. Nora and Rhonda when faced with what they felt was an overwhelming situation and needed to organize their time wrote: *First we stopped, we communicated with each other to figure out what we needed to do and better ways to prioritize our time so that we could get everything accomplished correctly. Then we implemented our plan and correctly accomplished our goals regarding everything we had to do* (Journal 121, p. 7). They were able to successfully complete the care because they

had each other to plan and the lab became an enjoyable experience for them. Michael and Crystal during the second week wrote: *We planned out our care for both patients and discussed our progress frequently* (Journal 124, p. 3).

One of the most recognized proponents of dialogue in a social context is Vygotsky (Cole et al., 1978). He believed that children arrive at a common understanding by socially negotiating meaning via problem-solving activities. When a person collaborates with a more competent peer or adult, the distance between this potential for development through problem solving determines his zone of proximal development. Through social interaction with peers, students gain different perspectives about a problem. In analyzing Vygotsky's work, Jaramillo (1996) felt that his conceptual framework contributed to the development of constructivist theory. Constructivists believe that the mind creates its own reality, based on experiences and interaction with the environment (Piaget, 1932).

Baxter Magolda (1992) concluded that the "ways of knowing and patterns within individuals are socially constructed" (p. 20). Depending on the stage of knowing, peers are important in "explaining what they have learned from each other; providing active exchanges; being a source of knowledge; and enhancing learning via quality contributions" (p. 106). Caine and Caine (1997) emphasize in their research on the brain that learning is influenced by social relationships.

Johnson et al. (1994) believe that through the process of dialogue in a group, new ideas or solutions are generated more frequently than if the individual were working alone. In cooperative learning classrooms, beside having students talking together when working

with projects, the teacher encourages the students at the end of a lesson to process with each other what they learned.

A number of specific studies have recently documented the importance of “talk” in a learning situation. In Cicala’s (1997) study on the relationships between involvement and reflective judgment, the statistical analysis showed significant positive correlation between reflective judgment and the frequency with which students participated in asking questions concerning points learned in the reading or discussed in class. It appears dialogue is important in problem solving and construction of knowledge.

When using a social-constructive framework for students in social work to assist in understanding culture and self, Lee and Greene (1999) concluded that there is an increase in reflective learning when there is dialogue. Through social interaction, individuals co-construct different ways of categorizing reality.

In studying the significance of talk, Teasley (1995) concluded in his research that talk dyads produced more talk overall and more interpretive types of talk than when the child was encouraged to talk aloud when by him or herself. Children with partners produced more highly rated hypotheses than did children alone. His research was consistent with the research on talking aloud and its positive effect on learning and problem solving. He states: “The answer to the question, ‘Why are two heads better than one?’ may fundamentally rest on the interdependency of cognition and social relations in communication” (p. 219). Land (1998) further supports the importance of talk among children. Kindergarten children who talked and shared journals in story formation were able to develop an understanding of a story with an increase of ability over time.

In reviewing my personal notes, I observed how I was a facilitator of dialogue with the students. I would remind myself to talk aloud when I was problem solving with the unpaired students, as well as with the paired students. I felt that I could role model problem-solving techniques if they could “hear” me think. With the paired students, not only did I try to remember to think aloud, I also tried to remember to turn the question back to one of the members of the pairs instead of answering the question directly. I felt that would facilitate the process of learning when they listened to each other’s reflections. When the partner could not answer the question, then I would ask related questions to encourage his or her thought processes. When a student seemed to have a greater understanding than her partner and it was difficult to stimulate answers to questions from the partner, I then attempted to further facilitate the learning by trying to respond to the student’s questions.

This practice was consistent with Vygotsky’s belief in experiential learning—the teacher is the facilitator of experiential learning within the social context. Brookfield (1993) in describing his own journey in teaching, describes experience as a transaction between the learner and the milieu in which he or she operates—it is relational. Teachers need to acknowledge the agency of the learner and construction-learning activities that will assist the students in the learning process.

In summary, dialogue emerged as a theme for students in the unpaired and paired setting. What is surprising is that this aspect of the clinical experience has not been previously ascertained.

Reflection

For this study, I developed a set of questions that could act as a tool to facilitate student reflection on the clinical experience—in particular, what problems they had faced that day and how they had resolved them. A rubric was developed to evaluate two components. one related specifically to problem solving (the A part) and the other to reflection about the process (the B part). In this section I discuss the responses given to the reflection component (B). There was a total of 7 possible points—1 point for each reflective component in questions 1, 2, 3, 4, 6, 8, and 9. When I began the study, I anticipated that the “tool” of structured journaling would increase the students’ ability to reflect as the quarter progressed. However, this did not happen with the unpaired students. When evaluating reflection of unpaired students with the use of journals, there was a drop in the class mean reflective score from 3.5 to 2.2 by the 5th week and then a gradual increase to 3.25 by the 9th week. The score however did not return to the level of 3.5, which was the first score. The possible reason for reflection not increasing to a higher level than the beginning score may be that students did not journal conscientiously because they felt they did not have time or they lacked interest in writing in their journals. One student commented, *You must know when we are writing well and when we are not.* She pointed to her journal and asked me to look at it. As I did, she remarked, *Now, can you see I did not do a very good job last time.* She then stated to me that she would try to do better in the future.

Although there was a drop in reflection by the 5th week for the unpaired students, when I read their journals looking for themes that were emerging, over time their

comments revealed that there were changes in their behaviors or performance in clinical practice. This represented the last stage of Boud et al.'s reflective model (1985): *outcome and action*. During this stage a new ability that they had planned for in the previous stage is ready to be incorporated into the learning and applied to the next activity. This was represented when the student's weakness became strengths later in the quarter. For instance at week 2, Joan stated that *my weakness is time management. I can do better in this area. I will be more prepared* (Journal 102, p. 5). At week 8 she stated *My strength for this clinical experience was my organizational skills* (Journal 102, p. 21). Joan's self assessment on this point demonstrates that she changed.

Carol had not gotten a report about her patient because she felt intimidated by the nurse. She reflected about the experience in her journal. *This lab and the previous lab I am using as a learning experience. I am not happy to have 2 unsatisfactory labs. I will not, on the other hand, let it slow me down in any way. I am not disappointed in myself. I was at the time and I have chosen to learn from it and keep going. Actually, honestly, I consider myself lucky because if this didn't happen now, who would know how much later it will have happened. I'm also lucky my patient did not get hurt* (Journal 107, p. 13).

The next week Carol felt she had made strides to meeting her goal to overcoming her shyness. *I'm proud of this lab. Like I said, I fearlessly approached my RN and got report and started with my work. I found myself being more assertive with my patients—less timid, less shy. I think I took good care of my patient* (Journal 107, p. 15).

Reflection levels for paired students did show an increase over time. The 1st weeks mean reflective score for the group was 2.7 and by the 8th week there was a gradual rise

to 6.2. Paired students also demonstrated changes in behavior as the result of reflecting with dialogue. During the first week, Becky and Lauri had problems with communication. *One of our weaknesses was not understanding that assessments, treatments, procedures, etc., were to be done together* (Journal 129, p. 3). I had noticed that they were having difficulty communicating. We discussed a plan for improving their communication with each other. The next week their journal statement was, *We were able to work together at a higher level because of the better communication we have learned to do* (Journal 129, p. 5).

Diane and Rogenia faced the frustration of spending quality time with patients and getting charting and reporting done on time. *Our weakness for this evening was not being able to chart on time and give report at the end of the shift. Maybe by giving medication at one time rather than multiple specific times we would make our shift more efficient. We felt we should have spent more quality time with each patient than we were able to do* (Journal 122, p. 5). The students asked my advice as to planning the care and I reviewed with them first their own plan before giving suggestions. Later in the quarter because they had planned together they made progress toward meeting the needs of the patients and getting procedures and medications done on time. *Our strengths for this clinical experience was being able to get our procedures done on time, handling orders and accommodating our patients needs* (Journal 122, p. 15).

In reviewing the research in ERIC, Dissertation Abstracts, and Medline there are no studies or reports on journaling while talking with another individual; however, according to Boud et al. (1985), reflection is enriched when it is not a solitary act:

Reflection is not just an individual activity; engaging in the process with another person or with a group can change the meanings we draw from experience. When a group participates in a common event, each person will experience it in a particular way and will have an interpretation of aspects of that event which may differ from that of others. Formulating and articulating experience transforms it in ways that can allow us to see it anew. (p. 11)

The use of journals as a method for promoting reflection is well-studied (Saylor, 1990; Sedlak, 1997). “Dialogue” journaling (Mower, 1995; Paterson, 1994) consists of exchanging ideas in *writing* between the instructor and the student. Deloney, Carey, and Beeman (1998) advocated the use of electronic journal writing to foster reflection and provide feedback in an introduction to a clinical medicine course. Journaling is considered a self process in promoting reflective practitioners (Moss, 1997) and journal writing and then discussion with a group promoted critical thinking reflection (Farrell, 1996). Journaling can be one of the methods a nurse educator uses to help promote reflection and critical thinking within students.

Connections

One of the reasons for instituting journals as a method for reflection is to assist students in making a connection between theoretical knowledge and observations made in the clinical setting. Both case studies demonstrated incidents where students were able to specifically make connections between what they had learned in class and what they were observing and doing in the clinical setting. Connection statements were not only seen in response to question three—What knowledge was required for you to solve the problem?—but were described in response to questions 1 and 9. For instance, when Kim was answering question 9, she struggled with what she had learned in Fundamentals of

Nursing Class regarding decisions that health care providers are to render in allowing patients to live or die and what she was observing about her patient. *I learned about a doctor's moral obligation to a patient. The patient who was having congestive heart failure would have probably gone peacefully but the patient was a full code. There were not family members to change the code status for her so the patient was transported to ICU and put on a ventilator. I wish she was left off the ventilator—her quality of life will probably not improve. This reminds me that so many times we are so driven to make people better if they die it could seem like a failure, but sometimes I feel we as health care providers need to step back and let nature take its course* (Journal 101, pp. 15, 16).

To me, she was trying to connect what she had learned and her feelings to what she was observing. Ellen made the connection between forms of communication. *Words are not the only communication that exists in the world. Using body language, talking with action, and using the most simple words will help everyone a lot with communication* (Journal 103, p. 2). Her patient spoke Spanish and knew only a few words of English.

In answering question 1, Anita made a connection with what she was observing and what she had learned from studying denial. *My patient was short of breath when in bed and while ambulating. Her respirations were shallow and slightly labored. I noticed while with her she didn't know why she was in the hospital. She felt like she was in the dark on her condition. She is in denial of having any serious physical problems. She realizes she gets short of breath, but doesn't think it is such a big deal* (Journal 110, p. 1).

The paired students made connections as the result of reflecting about the problem that they had identified. *Mrs. F. was experiencing anxiety and depression that could be causing insomnia. She wanted to leave the hospital and go back home. She stared crying and sobbing when we came into the room and asked how she was doing. She told us that the doctor might be sending her to ICU [intensive care unit]. She had psychosocial needs even more than her relative visits and phone calls. We think if we had asked her to pray, she could have experienced some peace and then go to sleep* (Journal 123, p. 6).

This indicates to me that structured journal writing is an effective pedagogical tool to assist students to make connections as part of cognitive development.

Being able to connect previous experience or previous learned knowledge/theory from class is a goal in making reflection a part of the individual's learning experience. Being able to make the connection or links becomes a part of the reflective process. From this process old knowledge gives way to new knowledge and ideas (Boud et al., 1985).

Learning

One of the outcomes of reflection is that learning has taken place. In both unpaired and paired students learning emerged as a theme. Learning for the unpaired students was mostly related to the psychomotor skills. *I learned how to give report correctly and assisted the respiratory therapist in suctioning my patient* (Journal 103, p. 12). Carol wrote about what she had discussed with the group in post-conference. *Like I said in post-conference, I really was excited to see placement of a tracheostomy tube.*

The respiratory therapist really explained everything to me that I probably wouldn't have had a clue about with out him. It was fun (Journal 107, p. 11).

An unpaired student learned from dialogue with health personnel. *I learned so much today. The respiratory therapist and the RN explained many, many things to me that I didn't understand before. Now that I have seen these things (like ventilators), I now have much more knowledge stored in my brain. I am a visual and doing kind of learner and the lab experiences have helped me learn so much into my long-term memory bank. I really appreciated the respiratory therapist who put in the extra time to really explain things to me in detail. This is how I really learn well (Journal 110, p. 18).*

Students in the paired case study conveyed that learning came from the social context. Matt and Carol stated: *As the result of being paired, we are learning from each other (Journal 128, p. 8).* One day when Jim was working alone, he wrote that *it is much better to work with a partner. We can point out problems and we can discuss important information with each other (Journal 127, p. 10).*

Mari and Tracia wrote that: *We were very inquisitive, therefore, we learned a lot. We learned about feeding tubes, blood sugar tests, suctioning a sore mouth, hanging of blood and crushing medications to be put down a feeding tube (Journal 123, p. 12).*

Because of the reflective process, the paired students were able to identify that they were learning from each other.

Although combining the two pedagogical tools—journaling and dialogue pairs—to promote reflection is not addressed in the literature, my findings support the importance of

dialogue and journaling in the construction of knowledge. By combining the two methods this study showed increases in reflection over a 9-week period.

Problem Solving

Problem solving is a skill, and since the clinical setting involves problems that students encounter daily, it is important that instructors use strategies that will guide students in this process (Cholowski & Chan, 1995; Klaassens, 1992). In this study, although both groups were consistent in problem solving by the way they wrote in their journals, in the unpaired group I identified 27 times that they did not write the correct steps for the problem-solving process. In evaluating the scores of the A criteria at week five (this was the lowest mean score for the group), question 3 at 57% and question 5 at 78.5% were the lowest percentage in response to the journal questions (see Appendix A10) by the group. These two questions remained the lowest throughout the 9 weeks. This indicated to me that there may be a relationship between knowledge and interventions in problem solving. I had reflected about two of the students in the unpaired group at the end of the quarter. Although they seemed to have performed safely, I felt that the knowledge they needed for problem solving was weak thus connections were not made many times when they were faced with a problem. As an instructor I need to continue to evaluate strategies that would strengthen the problem-solving process in students.

In the paired group, the details of the problem, identification of urgency, and steps to take in the interventions were readily identifiable. I identified three times that students

had not written the correct steps for the problem-solving process. In evaluating the scores to criteria A, the paired students were consistent throughout the quarter (see Appendix A9). For these students question 3 was also the lowest measured response at an average of 90% over the 9 weeks. This indicated to me the pairs had competent problem solving ability. This corresponds with Osana's (1998) study that students in small groups devoted more time to metacognitive activities such as reflection, developed greater cognitive flexibility, and used a larger number of solution strategies than students taught the direct instructional way. Cholowski and Chan (1995) further documented that a "think aloud" strategy and interactive dialogue with an expert nurse assists students in promoting an interconnected knowledge base with problem solving.

Although the independent t-test showed the unpaired and paired group were significantly different $t(202)=3.72, p=.00$ (see appendix A11), this difference is small which means that practically they are the same. In reading the journals, I noticed both groups used previous problem solving incidents to solve problems they faced in a later clinical experience. This indicated they were internalizing what they had learned by reflecting on their knowledge base (Burrows, 1995; Cholowski & Chan, 1995).

Linking Critical Thinking, Problem Solving, and Reflection

In the literature there are times when critical thinking, problem solving, and reflection seem unrelated. Definitions are not clear. One of my assumptions in this research is that critical thinking, problem solving and reflection are linked together. I also assume that methods can be developed in experiential environments that would promote

these three processes. Sedlak (1997), in her study of 1st-year nursing students, linked critical thinking and reflection together in her definition.

Critical thinking is a reasoning process in which the nursing students reflect on ideas, actions and decisions of oneself and others related to clinical experiences. Reflection is recall of clinical experiences that seemed to lead toward critical thinking to gain insights into ones learning, decisions, and professional development (p. 16).

Sedlak concluded that reflection does prompt first-year nursing students to think critically.

Baker (1996) also concluded that reflection improves critical thinking. She believes “reflective journaling offers a teaching strategy which helps provide balance to the objectification and linear thinking skills that we currently have developed in students” (p. 21). Additionally, she states, “reflective journal writing nurtures many dimensions of critical thinking—e.g., affective and cognitive skills—open-minded, flexible and honest that are important to nursing practice” (p. 22).

Mezirow (1990) feels that reflection is generally used as a synonym for high-order mental processes (critical thinking), and reflection corrects distortions in our beliefs and errors in our problem solving.

When we engage in task-oriented problem solving—how to do something or how to perform—we are engaged in instrumental learning; reflection is significantly involved when we look back on content or procedural assumptions guiding the problem-solving process to reassess the efficacy of the strategies and tactics used. This type of learning leads to reflective action. (p. 7)

In his later book Mezirow (1991) further affirms the link between reflection and problem solving. “As we assess our assumptions about the content or process of problem solving and find them unjustified, we create new ones or transform our old assumptions

and hence our interpretations of experience. This is the dynamic of every day reflective learning” (p. 200).

The Lewinian Model (Kolb, 1984) of experiential learning describes the process that students experience. The model begins with a concrete experience and moves through observation and reflection, conceptualization and generalization, testing implications of concepts in new situations and finally back to concrete experience in an ongoing spiraling fashion. In this study students had concrete experiences as they worked in a clinical setting. These experiences were the focal points of their learning. The next step in the Lewinian Model is observation and reflection. In this study the use of journals in the clinical setting focused the students on the problem experienced. In the paired situation, because they were talking with each other, participants received immediate feedback regarding their thoughts. This is an important step in this experiential process. Via this process of reflection, nursing students were primed for procedural steps three and four.

Following reflection students moved toward developing ability to conceptualize and generalize. These concepts and generalizations are then tested when the students were again in the clinical setting. In both case studies, students were able to use the information that they had processed in their journals to solve problems they encountered in the next clinical experience. This is the application phase of Lewin’s model.

Assessing Reflection

In this section, I answer Research Question 2: How can the clinical experience be evaluated for the presence of reflective processes?

In reviewing previous research, I heard concerned voices of educators calling for methods that would assist students with critical thinking, problem solving, and reflection in the clinical setting and for tools to evaluate these processes (Alexander & Giguere, 1996; Beck, 1995; Burrows, 1995; Colucciello, 1997; Infante, 1981; Jinks, 1991; Oermann, 1997; Tanner, 1994). Evaluation instruments that have been developed to assess for reflection and critical thinking have often proven ineffective.

Because I wanted to promote reflection and thinking in my students in the clinical setting, I chose journal writing as a method to stimulate reflection. The questions for the journal were specifically developed to provide structure to the reflective process. Otherwise, the journal would be a mere catalogue of events (Van Gyn, 1996). Second, a rubric was developed to meet the NLN recommendation for assessment criteria for critical thinking. This rubric yielded a holistic score (Herman, Gearhart, & Aschbacher, 1996) giving me specific feedback as to the progress of reflection. The criteria were adapted from Boud et al.'s (1985) stages of reflection (see chapter 3) and definition from Mezirow (1991) as to what constitutes a reflector. Mezirow defines non reflector, reflector and critical reflector. The written answers to the journal questions where students only listed the events were considered non reflective. When a student answered with connections or thoughtful ideas, the answers was considered reflective element. To maintain reliability of the rubric, it was used by a professor of education and a nursing faculty at the college

where I am employed (Miles & Huberman, 1994). Inter-rater reliability for the nursing faculty and I was .87.

The results of the rubric showed the unpaired students decreased in reflection over time. The total reflective score possible was 7. The first week reflective class mean was 3.5. There was a decrease to 2.2 by the 5th week and then a gradual rise to 3.25 by the 9th week; however, the linear change was not significant. The paired students, however, had a progressive increase in the reflective score which was significant. The beginning class mean was 2.7 and the last score of 5.8. The highest class mean of 6.2 occurred at the 8th week. An independent t -test was performed to determine if there was a difference between the unpaired and paired case study groups. The over all mean for the unpaired group was 3.02 and the overall mean for the paired group was 4.59. The independent t -test showed a significant difference with $t(202) = 5.94$, $p = .00$ indicating there was an increase in the reflection in the paired group (see Appendix A11). This simple process-specific question and rubric—indicated levels of reflection in both settings and an increase in reflection over time with the paired students.

By developing specific questions and a rubric, I am meeting the National League for Nursing (NLN) for the Associate Degree of Nursing (ADN) mandates by the year 2000 ADN programs to be accountable for assessing critical thinking in their curriculum and perhaps answering concerns for authentic assessment for evaluating thinking by other health professions such as dentistry (Lim & Chen, 1999) and medicine (Carney et al., 1999), and education (Darling-Hammond, 1994; Malbry, 1999). Traditional methods for assessing the presence of critical thinking have fallen short of their expectations (Scott,

Markert, & Dunn, 1998). Facione and Facione (1996b) call for multiple method designs with evaluation that address the diverse contexts present in critical thinking and judgment made by the nurse. Oermann (1997) further emphasizes the importance of evaluation of critical thinking in the clinical setting. "Clinical evaluation strategies are also needed to monitor the development of students' thinking skills over time" (p. 25). Thus the development of this rubric will assist me in monitoring the development of students' thinking.

In reading the literature on rubrics, they seem to develop over time as they are used by the teacher and reviewed for validity of information being measured (Herman et al., 1996; Martin-Kniep, 1998). In reviewing the results of the rubric and the qualitative analysis of themes, I asked myself where changes were needed. As a result of using this rubric, I have adapted one question in an effort to probe for the outcome of the problem: "Was it solved? Why or why not?" I also plan to develop questions that would ask the paired students to review their weaknesses from the week before and tell how they have progressed in their plan of action. I feel that the rubric did assess the presence of reflection and growth over time and I continue to use it.

Secondary Purpose

The primary purpose of my study was to develop tools that assist students in linking theoretical knowledge with clinical problem solving. The secondary purpose was to tell my experience as I try to facilitate increased reflection in the clinical setting. I felt that

I needed to bring theory together with my own practice and then describe what I learned from implementing methods for promoting reflection in the clinical setting.

As an educator faced with demands of accrediting bodies to evaluate the presence of critical thinking, I used journal writing and paired students in the clinical setting to promote reflection. I developed structured questions and a rubric to facilitate and evaluate the process of thinking. Like the students, I kept a journal of my thoughts and actions so that when I reviewed the material that I studied I could decide what to maintain or what areas to change to strengthen the process of problem solving and reflection.

For both case studies, dialogue was important in learning from the environment. In the unpaired students, I changed the journaling time from the end of post-conference to the middle because I was concerned that students would not have enough time writing in their journals. Past experience had taught me that I needed to allow enough time for journal writing otherwise I would receive journals with unanswered questions. In spite of the change in journaling time the students enjoyed telling each other about their experience and asking questions that they still did not spend as much time writing. From these students I learned the importance of dialogue. The next quarter I allocated the journal writing at the end of post-conference and encouraged students to talk about their experience with the whole group before they journaled. I noticed also after the paired students had been writing and talking together they would share a thought with the group that had just come out of the dialogue that was taking place.

For the unpaired students, dialogue with their fellow classmates was important to gather information and for decreasing the stress that they felt. Later in the quarter, I

noticed that the unpaired students were spontaneously collaborating with each other regarding problems or activities that needed to be done.

I have used cooperative learning in my classroom for 5 years even though many educators told me that cooperative learning in college classrooms was not feasible. I wanted to expand this method to the clinical setting. As a result I conducted a pilot study, I concluded that cooperative/collaborative learning opportunities should be provided for all of the students in the clinical setting.

The process in bringing a new method into the clinical setting was not an easy one. Change is challenging. I discovered that although I gave what I thought were clear explanations, because this process was new to both students and staff, it was important to repeat the explanation and expectations frequently. During my discussion time with the staff, they began to see the importance of students learning to collaborate with each other. It seemed that my explanation of the process was getting through to them. In the intensive care unit the registered nurses mentioned to me that the collaborative experience of the students seemed to decrease the students' anxiety as they entered the critical care area.

For the students, learning to trust each other's knowledge was a new concept, and as a teacher, I worked at facilitating this process by returning the questions asked by a student back to the other member of the pair. If the student told me that he or she had already dialogued with the partner then, I would use questioning techniques to elicit a response as opposed to just giving an answer. This was not always easy for me to do. I noticed in my personal notes that it was easier to slip back into a telling mode or into just

answering the questions. For me this experience helped to build skills and reinforce what I had learned previously in educational methods classes.

In trying to apply learning strategies, it was easier to be rigid in what I had learned than it was to be creative in solving a problem that arose. I had to remind myself to be flexible. This flexibility was used when paired nursing students had difficulty getting along with each other as they worked together. I did not want this difficult time to be a barrier to learning, so I collaborated with someone who had used paired strategies to solve the problem amiably.

I felt that because students were paired I was able to spend more time with more students because of the close proximity and because I was dialoguing with two individuals at once. It was easier to pull students together for learning moments or for viewing infrequent procedures because they were working together. Students had to learn to share new procedures and felt that it would be better for them if they could individually perform the procedures. I would remind the students that because they were working together it increased the opportunity of observing a procedure that they would probably not get to do or even view if they had been working individually.

Most of the time having two student care givers created an atmosphere of comfort and support for the patients. Patients liked the attention that students were giving them. I found that I needed to ask the students about how the patient was perceiving their attention. If a patient was feeling uncomfortable, the students and I problem-solved to meet that patient's needs. If there was a new procedure that needed to be performed on a patient who was not their assigned patient, I would secure permission from the patient to

have more than one student in the room. This was to protect the patient's right for privacy.

During post-conference I observed the students dialoguing together while writing in their journal. This was important because I needed to know that both students were doing the work and that dialogue was occurring. The process of dialoguing seemed to energize the room. I noticed that students wanted to share with the group what they were discussing and what they had learned.

Like many others who conduct research using qualitative methods, I often had doubts concerning what I was observing. However, D. Schön (1983) emphasizes in the following statement the importance of going into the "swamp":

In the varied topography of professional practice, there is a high, hard ground where practitioners can make effective use of research-based theory and techniques, and there is a swampy lowland where situations are confusing "messes" incapable of technical rationality. The difficulty is that the problems of the high ground, however great their technical interest, are often relatively unimportant to clients or to the larger society, while in the swamp are the problems of greatest human concern. (p. 42)

When individuals add to their epistemology of practice the use of reflection-in-action, a relevancy to the research emerges (Schön, 1983). This has been my experience throughout this study. As I reflected, made changes, and reflected again, the importance of what I am practicing and learning became relevant to me.

Suggestions for Clinical Instructors

The experience and knowledge I gained from this research allows me to make the following recommendations to the reader.

1. There is a richness of knowledge when people come together and share their experiences to plan for better pedagogical methods. As educators we need to have a “good talk about good teaching” (Palmer, 1998, p. 144). These talks should include ways of knowing, definitions of critical thinking, and classroom environment.

2. Nursing educators need to identify and analyze the components of critical thinking and their relationship to reflection and problem solving (nursing process). Often nursing has general objectives for critical thinking and problem solving; these objectives are not specific to the each level the students are presently in. Nursing educators should establish at which level of nursing education that specific components of critical thinking should be emphasized, and then build on each level as the student progresses through the program.

3. In talking aloud as instructors we should be naming the processes that we are using. This will assist the students to establish the habits of the mind and promote understanding of the processes they are performing.

4. We should give feedback in students journals. I had deliberately chosen not to give much feedback in the journals. As the result of assessing and analyzing the journals, this turned out to be a weakness in the reflection process. Because of this realization, I have started giving feedback in the journals.

A second weakness I feel I found in the journaling process used in my study was not having the students review their journals and comment on their growth. Therefore, in the future I will have the paired students review their journals at the end of the quarter and

dialogue with each other as to how they view their growth in thinking and problem solving. They will then submit a summary of their thoughts to me.

5. Even though students were paired, sometimes mistakes were made. This meant that two people were making the error. Nursing educator could spend time teaching students how to check each other for accuracy. This includes how to communicate in such a way that one individual is not just giving in to his or her partner with the stronger opinion. Learning to negotiate is an important skill when students are paired and a decision needs to be made.

6. When I was asked if pairing the nursing students should be used every nursing class in the Associate Degree program, I gave an emphatic “Yes!” As students would advance they could build upon the different components of teamwork, critical thinking, and reflection.

Recommendation for Further Research

As the result of this study, the following are recommendations for further research:

1. Further development of rubrics that would assess the level of reflection as students progress through the nursing program is needed.

2. There is a need for longitudinal studies assessing for the qualities of reflection and critical thinking.

3. Faculty need to continue to conduct research on methods that can be used in the clinical setting that would assist students in problem solving, reflection, and critical thinking.

4. Broader methods should be developed that encourage multiple ways of viewing a problem.

5. There is a need for further study on how reflecting together in the form of journal writing promotes higher-order thinking.

6. There is a need for further study with triads or a pair of pairs on how reflecting together increases reflection.

Summary

My findings are:

1. The problem-solving process was documented in reflective journals in both cases.

2. The rubric indicated the presence of reflection in unpaired students and paired students.

3. Paired nursing students had a growth in reflection when they journaled and worked together.

4. Themes emerging from the journals demonstrate dialogue effectively reduced anxiety and increased perception of learning.

5. Journal writing as unpaired and with paired classmates assists students to link theoretical knowledge with clinical experience.

6. Though reflection has been traditionally considered a self process, this study indicated that benefits in reflecting together in a journaling process appear to be greater.

This study suggests that students writing in a reflection journal can be used as evidence for the presence reflective thinking. The teacher can facilitate the process of reflection by pairing students to create a dynamic, caring environment which promotes feelings of connectiveness to the learning experience, thus increasing the opportunities of reflection, critical thinking, and problem solving.

APPENDIX A
RUBRICS, QUESTIONS, AND TABLES

Holistic Critical Thinking Scoring Rubric (HCTSR)

4. **Consistently does all or almost all of the following:**
 - Accurately interprets evidence, statements, graphics, questions, etc.
 - Identifies the salient arguments (reasons and claims), pro and con
 - Thoughtfully analyzes and evaluates major alternative points of view
 - Draws warranted, judicious, non-fallacious conclusions
 - Justifies key results and procedures, explains assumptions and reasons
 - Fair-mindedly follows where evidence and reasons lead

3. **Does most or many of the following:**
 - Accurately interprets evidence, statements, graphics, questions, etc.
 - Identifies relevant arguments (reasons and claims), pro and con
 - Offers analyses and evaluations of obvious alternative points of view
 - Draw warranted, non-fallacious conclusions
 - Justifies some results or procedures, explains reasons
 - Fair-mindedly follows where evidence and reasons lead

2. **Does most or many of the following:**
 - Misinterprets evidence, statements, graphics, questions, etc.
 - Fails to identify strong, relevant counterarguments
 - Ignores or superficially evaluates obvious alternative points of view
 - Draws unwarranted or fallacious conclusions
 - Justifies few results or procedures; seldom explains reasons
 - Regardless of the evidence or reasons, maintains or defends view based on self-interest or preconceptions

1. **Consistently does all or almost all of the following:**
 - Offers biased interpretations of evidence, statement, graphics, questions information, or the points of view of others
 - Fails to identify or hastily dismisses strong, relevant counterarguments
 - Ignores or superficially evaluates obvious alternative points of view
 - Argues by using fallacious or irrelevant reasons and unwarranted claims
 - Does not justify results or procedures, or explain reasons
 - Regardless of the evidence or reasons, maintains or defends view based on self-interest or preconceptions
 - Exhibits close-mindedness or hostility to reasons

Resource: (Facione & Facione, 1996a)

Teacher's Evaluations of Students Using HCTRS

Names	Group Number	Quarter 1	Quarter 2	Average
Ching	120	3	3	3
Abe	120	3	2	2.5
Nora	121	3	2	2.5
Rhonda	121	3	2	2.5
Diane	122	3	2	2.5
Rogenia	122	3	2	2.5
Tracia	123	4	4	4
Mari	123	2	2	2
Michael	124	3	2	2.5
Crystal	124	4	4	4
Cheri	125	3	3	3
Rosalee	125	3	2	2.5
Sheila	126	3	3	3
Gerson	126	3	2	2.5
Jim	127		2	2
Deborah	127	4	2	3
Matt	128	3	2	2.5
Carol	128	4	3	3.5
Becky	129	4	4	4
Lauri	129	2	2	2

POST CLINICAL REFLECTIONS:

As a part of the learning process in the clinical setting, you are to keep a journal about what you have learned. Included in this journal are the following questions. You must answer these questions in the notebook provided for you.

1. Looking back, do you think that the problems that you identified were the most important ones for the patients? What additional problems do you now identify as the result of caring for the patients?
2. Identify a problem or a need that arose during the shift. Explain the circumstances of this problem including whom, what, when, where, and how urgent was the problem.
3. What knowledge was required for you to solve the problem?
4. What resources helped you to solve the problem?
5. What steps did you take to help solve the problem?
6. What influenced your thinking about this problem?
7. What were your strengths for this clinical experience?
8. What were your weaknesses and tell how you will strengthen these weaknesses the next clinical experience?
9. What were other thoughts and feelings about your clinical experience today?

Reflective Analysis Rubric

- ___ 1. A. Identifies one major significant problem.
- ___ B. Identifies other related problems, may include reasons for the problem.
- ___ 2. A. Identifies a problem that arose.
- ___ B. Explains reason for urgency or lack of urgency.
- ___ 3. A. Identifies one piece of knowledge needed to solve the problem.
- ___ B. Identifies connecting pieces of information needed.
- ___ 4. A. Uses external resources when appropriate to solve the problem.
- ___ B. Recognizes personal resources as a resource.
- ___ 5. A. Identifies all logical steps as a part of implementation process.
- ___ 6. A. Uses reliable external reasons to influence thinking.
- ___ B. Uses internal reason to influence thinking.
- ___ 7. A. Identifies one strength connected to patient care.
- ___ 8. A. Identifies one weakness connected with patient care.
- ___ B. Explains how to improve on his or her weakness.
- ___ 9. A. Names obvious thoughts and feelings connected to patient experience.
- ___ B. Expand on reasons for thoughts or feelings noted from the experience.

The reflective analysis rubric was used to analyze the answers to the questions in the journal. The question numbers correspond with the numbers in the reflection journal. For each of the blank lines preceding the numbers and letters, one point is awarded if information is present and correctly processed. Of the total of 16 points, 7 (the B areas) are identified indicators of reflections.

Reflective Scores for Unpaired Students Over 9 weeks

Name	Journal Number	Weeks								
		1	2	3	4	5	6	7	8	9
Margaret	119	RT	OR	1	1	1	1	0	2	1
Rosemary	113	RT	OR	4	3	2	4	2	3	4
Robin	116	2	RT	OR	3	2	2	4	3	5
Rose	115	2	RT	OR	3	AB	0	1	2	5
Carol	107	4	5	OR	2	2	2	1	2	2
Ellen	103	4	7	3	2	1	3	5	1	2
Nancy	118	2	1	4	3	5	OR	1	0	3
Terry	114	0	2	2	3	1	OR	RT	2	2
Crystal	105	2	1	0	0	0	2	OR	0	1
Marie	112	AB	2	5	2	3	3	OR	4	5
Ann	109	2	2	2	1	2	4	1	4	OR
Cindy	117	6	4	6	2	4	4	6	RT	OR
Bill	108	2	4	3	3	2	0	0	OR	2
Patricia	111	4	2	2	3	OR	4	3	AB	RT
Steve	104	3	4	4	OR	3	2	1	2	3
Anita	110	7	7	6	RT	OR	4	5	6	4
Linda	106	3	2	5	5	RT	OR	3	2	3
Kathy	101	7	6	6	6	OR	6	6	3	5
Joan	102	6	4	6	3	3	4	5	OR	5
	Mean Score	3.5	3.5	3.7	2.65	2.2	2.8	2.75	2.4	3.25

Total Score was 7
OR = Operating Rooms
RT = Respiratory Therapy
AB = Absent

Simple Linear Regression Analysis for Change in Mean Problem-Solving (Criteria A) Scores Over 9 Weeks for Unpaired Students (N=17)

Variable	<u>R</u> ²	Signif <u>F</u>	<u>B</u>
Week	.0009	.7146	0131

Percentage of the Unpaired Group's Answers to Criteria A Over 9 Weeks

Questions	Weeks									Average
	1	2	3	4	5	6	7	8	9	
1	87.5	93	100	88	93	94	100	100	94	94
2	100	100	100	94	93	100	94	100	100	98
3	75	73	87	82	57	87.5	62.5	93	87.5	78
4	100	100	100	100	100	100	87.5	100	87.5	97
5	75	80	81	65	78.5	87.5	75	80	87.5	79
6	94	87	100	100	93	100	81	93	100	94
7	100	100	100	94	100	94	87.5	93	94	96
8	100	87	94	94	93	87.5	87.5	93	87.5	91.5
9	94	93	87.5	88	93	100	87.5	80	87.5	90

Simple Linear Regression Analysis for Change in Mean Reflective (Criteria B) Scores Over 9 Weeks for Unpaired Students (N=17)

<u>Variable</u>	<u>R²</u>	<u>Signif F</u>	<u>B</u>
Week	.021	.0867	-.1002

Percentage of Answered Questions for Reflective Element (Criteria B) for Unpaired Students Over 9 Weeks

Questions	Weeks									Average
	1	2	3	4	5	6	7	8	9	
1	56	67	55	53	50	88	69	67	50	62
2	50	60	44	35	29	38	38	13	25	37
3	31	33	25	18	07	25	25	02	19	21
4	19	33	44	18	21	19	25	27	19	25
6	44	60	63	41	14	44	31	2	19	35
8	69	67	69	82	71	50	56	53	44	62
9	53	67	50	35	50	50	44	40	62	50

Reflective Score for Pairs Over 9 weeks

Journal Number Names	HCTSR Average	Weeks								
		1	2	3	4	5	6	7	8	9
120 Ching Abe	3 2.5	2	7	7	3	6	4	OR	RT	7
121 Nora Rhonda	2.5 2.5	5	2	4	3	OR	RT	3	6	4
122 Diane Rogenia	2.5 2.5	OR	3	4	5	4	5	4	7	RT
123 Tracia Mari	4 2	OR	RT	2	6	6	5	6	7	7
124 Crystal Michael	4 2.5	3	6	OR	RT	6	AB	4	6	AB
125 Cheri Rosalee	3 2.5	1	3	1	AB	2	4	RT	OR	4
126 Sheila Gerson	3 2.5	5	4	4	5	RT	OR	5	5	AB
127 Jim Deborah	2 3	0	4	5	5	4	5	6	RT	OR
128 Carol Matt	3.5 2.5	OR	RT	6	6	7	7	6	AB	7
129 Becky Lauri	4 2	3	5	OR	5	4	2	5	OR	AB
Mean Score		2.7	4.25	4.1	4.75	4.9	4.6	4.9	6.2	5.8

Total Score was 7
OR - Operating Room
RT - Respiratory Therapy
AB - Absent

Simple Linear Regression Analysis for Change in Mean Problem-Solving (Criteria A) Scores Over 9 Weeks for Paired Students (N=10 pairs)

Variable	R ²	Signif F	B
Week	.0344	.1423	.0411

Percentage of the Paired Group's responses measuring Criteria A Over 9 Weeks

Questions	Weeks									Average
	1	2	3	4	5	6	7	8	9	
1	86	100	100	100	100	86	100	100	100	97
2	100	100	100	100	100	100	100	100	100	100
3	86	100	75	100	100	86	100	80	80	90
4	86	100	100	100	100	100	100	100	80	96
5	86	100	100	87.5	100	100	100	100	100	97
6	100	100	87.5	100	87.5	100	100	100	100	97
7	100	100	100	100	100	100	100	100	100	100
8	100	100	87.5	100	100	100	75	100	100	96
9	100	100	100	100	100	100	100	100	100	100

Simple Linear Regression Analysis for Change in Mean Reflective Scores Over 9 Weeks for Paired Students (N=10 pairs)

Variable	R ²	Signif F	B
Week	.2061	.0002	.31

Percentage of Answered Questions of Reflective Element (Criteria B) for Paired Students Over 9 Weeks

Questions	Weeks									Average
	1	2	3	4	5	6	7	8	9	
1	43	100	75	50	63	100	100	100	60	77
2	43	75	63	63	63	43	88	100	100	71
3	28	38	50	38	63	57	50	80	60	52
4	0	63	25	25	50	71	50	80	60	47
6	43	75	63	50	88	86	63	80	80	70
8	43	75	88	100	100	86	75	100	100	85
9	0	13	50	63	38	28	38	80	100	46

T-test of Independent Samples of GROUP for Means of A Criteria

Variable	Number of Cases	Mean	SD
Scores			
Unpaired	140	8.23	1.10
Paired	64	8.78	.54

T-test for Equality of Means

Variiances	t-value	df	2-Tail Sig
Equal	3.72	204	.00

T-test for independent Samples of GROUP For Means of B Criteria

Variable	Number of Cases	Mean	SD
SCORES			
Unpaired	140	3.02	1.78
Paired	64	4.59	1.69

T-test for Equality of Means

Variiances	t-value	df	2-Tail Sig
Equal	5.94	202	.000

APPENDIX B

LETTERS



March 30, 1998

Rita Van Horn
Nursing Department
Pacific Union College
Angwin, CA 94508

Dear Rita,

The Pacific Union College Review Board for Research Involving Human Participants has received your research protocol, abstract, participant consent form and guidelines for journalizing post clinical reflections. After reviewing these documents the Board is pleased to give its approval for research conducted in your Nursing III course between January and June 1998.

Your consent form meets the requirements of PUC's most recent Guidelines for Conducting Research Using Human Participants. We are pleased with the care you have shown in protecting the anonymity of your participants.

We wish you the best of luck in gathering your data.

Sincerely,

A handwritten signature in cursive script that reads "Linda Thorman".

Linda S. Thorman, Ed.D.
Associate Academic Dean

ASSOCIATE ACADEMIC DEANS
ANGWIN, CA 94508-9747
707-465-7103 OFFICE
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ANDREW University

April 14, 1998

Rita Van Horn
P.O. Box 883
Angwin, CA 94508

Dear Rita:

RE: APPLICATION FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

HSRB Protocol #: 97-98 : 245 Application Type: *Original* Dept: *Teach/Learn/Admin - 0114*
 Review Category: *Exempt* Action Taken: *Approved*
 Protocol Title: *Lived Experience of Paired Nursing Students in the Clinical Experience*

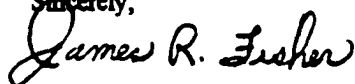
On behalf of the Human Subjects Review Board (HSRB) I want to advise you that your proposal has been reviewed and approved. You have been given clearance to proceed with your research plans.

All changes made to the study design and/or consent form after initiation of the project require prior approval from the HSRB before such changes are implemented. Feel free to contact our office if you have any questions.

The duration of the present approval is for one year. If your research is going to take more than one year, you must apply for an extension of your approval in order to be authorized to continue with this project.

Some proposal and research designs may be of such a nature that participation in the project may involve certain risks to human subjects. If your project is one of this nature and in the implementation of your project an incidence occurs which results in a research-related adverse reaction and/or physical injury, such an occurrence must be reported immediately in writing to the Human Subjects Review Board. Any project-related physical injury must also be reported immediately to the University physician, Dr. Loren Hamel, by calling (616) 473-2222.

We wish you success as you implement the research project as outlined in the approved protocol.

Sincerely,


Human Subjects Review Board
 c: Shirley Freed

Andrews University
School of Education
Leadership Program
Rita Van Horn, R.N., M. S., doctoral student
Clinical experiences of students in Nursing III Class

Thank you for volunteering to participate in my dissertation study of students' experiences in the clinical setting. You are asked to participate because I believe that students are interested in creating a positive learning environment in the clinical setting.

You will be asked to keep a journal for every clinical experience over the ten-week period of the clinical time. The benefit for you is that you will actually get to participate in helping me to determine what teaching strategies best help students learn in the clinical setting.

All information collected will be held in strictest confidence. While this information may be published, at no time will your name be used. Your decision to participate or not to participate will not affect your grade in the class. You may feel free to drop out at anytime during this study without prejudice. If you have any questions concerning this project or this consent, please call Rita Van Horn at 965-1318 or Shirley Freed at 616-471-6163.

I, _____, hereby give my consent to participate in the project described above. I have read and understand this statement and I have had all my questions answered.

Date: _____ Signature: _____

Witness: _____

REFERENCE LIST

- Abegglen, J., & Conger, C. O. (1997). Critical thinking in nursing: Classroom tactics that work. *Journal of Nursing Education*, 36(10), 452-458.
- Alexander, M. K., & Giguere, B. (1996). Critical thinking in clinical learning: A holistic perspective. *Holistic Nursing Practice*, 10(3), 15-22.
- Alfaro-Lefevre, R. (1995). *Critical thinking in nursing: A practical approach*. Philadelphia: W. B. Saunders Company.
- All, A. C., & Havens, R. L. (1997). Cognitive/concept mapping: A teaching strategy for nursing. *Journal of Advanced Nursing*, 25(6), 1210-1219.
- Arnold, E., & Boggs, K. (1999). *Interpersonal relationships: Professional communication skills for nurses* (3rd ed.). Philadelphia: W.B. Saunders Company.
- Ashley, J., & O'Neil, J. (1994). Study groups: Are they effective in preparing students for NCLEX-RN. *Journal of Nursing Education*, 33(8), 357-363.
- Bacon, E. (1623). *Novum organum*. Oxford: Clarendon Press.
- Baird, S. C., Bopp, A., Schofer, K. K. K., Langenberg, A. S., & Matheis-Kraft, C. (1994). An innovative model for clinical teaching. *Nurse Educator*, 19(3), 23-25.
- Baker, C. R. (1996). Reflective learning: A teaching strategy for clinical thinking. *Journal of Nursing Education*, 35(1), 19-22.
- Batson, M. C. (1997). Forward. In A. Neumann & P. L. Peterson (Eds.), *Learning from our lives: Women, research, and autobiography in education* (pp. 261). New York: Teachers College Press.
- Baumberger-Henry, M. (1998). Cooperative learning and case study: Does the combination improve nursing students' self-perception of the problem-solving process and decision-making skills? *Dissertation Abstracts International*, 59, 12B, AAG991491.

- Baxter Magolda, M. B. (1992). *Knowing and reasoning in college: Gender-related patterns in students' intellectual development*. San Francisco: Jossey-Bass Publishers.
- Beck, S. (1995). Cooperative learning and feminist pedagogy: A model for classroom instruction in nursing education. *Journal of Nursing Education, 34*(5), 222-227.
- Beck, S. E. (1992). The development, analysis, implementation and evaluation of cooperative learning teaching model using action research in RN/BSN nursing education. *Dissertation Abstracts International, 54*, 01B, AAG9312414.
- Benor, D. E., & Leviyof, I. (1997). The development of students' perceptions of effective teaching: The ideal, best and poorest clinical teacher in nursing. *Journal of Nursing Education, 36*(5), 206-211.
- Boltz, M. V., Boltz, N. L., & Glenn, C. J. (1993). Cooperative learning promotes caring in nursing education. *Cooperative Learning, 13*(4), 19-20.
- Bos, S. (1998). Perceived benefits of peer leadership as described by junior baccalaureate nursing students. *Journal of Nursing Education, 37*(4), 189-191.
- Boud, D., Keogh, R., & Walker, D. (1985). *Reflection: Turning experience into learning*. London: Kogan Page.
- Boud, D., & Walker, D. (1993). Barriers to reflection on experience. In D. Boud, R. Cohen, & D. Walker (Eds.), *Using experience for learning* (pp. 73-86). Bury St. Edmunds, Suffolk: St. Edmundsbury Press.
- Boyd, E. M., & Fales, A. W. (1983). Reflective learning: Key to learning from experience. *Journal of Humanistic Psychology, 23*(2), 99-117.
- Brookfield, S. (1993). Through the lens of learning: How the visceral experience of learning reframes teaching. In D. Boud, R. Cohen, & D. Walker (Eds.), *Using experience for learning* (pp. 21-32). Buckingham: The Society for Research into Higher Education & Open University Press.
- Broussard, P. C., & Oberleitner, M. C. (1997). Writing and thinking: A process of critical understanding. *Journal of Nursing Education, 36*(7), 334-336.
- Brown, A. L. (1994). The advancement in learning. *Educational Researcher, 23*(8), 4-12.
- Burrows, D. E. (1995). The nurse teacher's role in the promotion of reflective practice. *Nurse Education Today, 15*(5), 346-350.

- Caine, R. N., & Caine, G. (1997). *Education on the edge of possibility*. Alexandria: Association of Supervision and Curriculum Development.
- Candy, P., Harri-Augstein, S., & Thomas, L. (1985). *Reflection and the self-organized learner: A model of learning conversations*. Worcester: Billing & Sons.
- Carney, P. A., Bar-on, M. E., Grayson, M. S., Klein, M., Cochran, N., Eliassen, M. S., Gambert, S. R., Gupta, K. L., & Labrecque, M. C. (1999). The impact of early clinical training in medical education: A multi-institutional assessment. *Academic Medicine, 74*(1), 59-66.
- Chamberlain, M. (1997). Challenges of clinical learning for student midwives. *Midwifery, 13*(2), 85-91.
- Cholowski, K. M., & Chan, L. K. S. (1995). Knowledge-driven problem-solving models in nursing education. *Journal of Nursing Education, 34*(4), 148-154.
- Cicala, J. J. (1997). The relationship between student involvement and reflective judgment for students attending a community college. *Dissertation Abstracts International 58*, 06A, AAG9737453.
- Cole, M., John-Steiner, V., Scribner, S., & Souberman, E. (Eds.). (1978). *L. S. Vygotsky Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Colucciello, M. (1997). Critical thinking skills and dispositions of baccalaureate nursing students—A conceptual model for evaluation. *Journal of Professional Nursing, 13*(4), 236-245.
- Daley, C. E., Onwuegbuzie, A. J., Anthony, J., Bailey, P. (1997). *Predicting achievement in college-level foreign language courses*. Annual Meeting of the Mid-South Educational Research Association, Memphis, TN. (ERIC Document Reproduction Service No. ED 415 273)
- Darling-Hammond, L. (1994). Performance-based assessment and educational equity. *Harvard Educational Review, 64*(1), 5-27.
- Davis, E. (1995). Reflective practice: A focus for caring. *Journal of Nursing Education, 34*(4), 167-174.
- Degazon, C. E., & Lunney, M. (1995). Clinical journal: A tool to foster critical thinking for advanced levels of competence. *Clinical Nurse Specialist, 9*(5), 270-274.

- Deloney, L. A., Carey, M. J., & Beeman, H. G. (1998). Using electronic journal writing to foster reflection and provide feedback in an introduction to clinical. *Academic Medicine*, 73(5), 574-575.
- Dewey, J. (1933). *How we think*. Boston: D. C. Heath and Company.
- Doran, M. S., & Klein, J. D. (1996). *The effects of learning structures on student achievement and attitude using a computer simulation*. Proceeding of Selected Research and Development Presentations at the 1996 National Convention of the Association of Educational Communications and Technology, Indianapolis, IN. (ERIC Document Reproduction Service No. ED 397 788)
- Eisner, E. (1985). Modes of knowing. In E. Eisner (Ed.), *Learning and teaching the ways of knowing* (Vol. 84, pt. 2, pp. 23-36). Chicago: University of Chicago Press.
- Eisner, E. W. (1991). *The enlightened eye*. New York: Macmillan Publishing Company.
- Ellis, A. K., & Fouts, J. T. (1997). *Research on educational innovations* (2nd ed.). Larchmont: Eye on Education.
- Erler, C. J. (1995). The relationship of selected personal variables and anxiety of nursing students in the critical care. *Journal of Nursing Science*, 1(1/2), 27-32.
- Facione, N., & Facione, P. (1996a). Externalizing the critical thinking in knowledge development and clinical judgment. *Nursing Outlook*, 44(3), 129-136.
- Facione, N. C., & Facione, P. A. (1996b). Assessment design issues for evaluating critical thinking in nursing. *Holistic Nurse Practice*, 10(3), 41-53.
- Facione, P. (1984). Toward a theory of critical thinking. *Liberal Education*, 70(3), 253-261.
- Farrell, T. S. (1996). A qualitative study on the reflections of four English as a foreign language teachers in Korea. *Dissertation Abstracts International*, 57, 07A, AAG963926.
- Fitzgerald, G. E., Hardin, L., & Hollingsead, C. (1997). Engaging preservice teachers in hypermedia authoring: Process and outcomes. *Journal of Educational Computing Research*, 16(2), 191-207.
- Flager, S., Loper-Powers, S., & Spitzer, A. (1988). Clinical teaching is more than evaluation alone! *Journal of Nursing Education*, 27(8), 342-348.

- Ford-Gilboe, M., Laschinger, H. S., Laforet-Fliesser, Y., Ward-Griffin, C., & Foran, S. (1997). The effect of a clinical practicum on undergraduate nursing students' self-efficacy for community-based family nursing practice. *Journal of Nursing Education, 36*(5), 212-219.
- Foundation for Critical Thinking. (1997). *Critical thinking: Basic theory & instructional structures*. Rohnert Park, CA: Sonoma State University.
- Fugate, T., & Rebesch, L. M. (1992). Dual assignment: An alternative clinical teaching strategy. *Nurse Educator, 17*(6), 14-16.
- Gabbert, B., Johnson, D. W., & Johnson, R. T. (1987). Cooperative learning, group-to-individual transfer, process gain, and the acquisition of cognitive reasoning strategies. *The Journal of Psychology, 120*(3), 265-278.
- Gelula, M. H. (1997). Clinical discussion sessions and small groups. *Surgical Neurology, 47*(4), 399-401.
- Gerace, L., & Sibilano, H. (1984). Preparing students for peer collaboration: A clinical teaching model. *Journal of Nursing Education, 23*(5), 206-208.
- Glendon, K., & Ulrich, D. (1992). Using cooperative learning strategies. *Nurse Educator, 17*(4), 37-40.
- Goleman, D. (1994). *Emotional intelligence: Why it can matter more than IQ*. New York: Bantam Books.
- Gooden-Jones, E. M. (1996). Developing writing proficiency through cooperative learning strategies in limited-English-proficient college students. *Dissertation Abstract International 57*, 05A, AAG9631038.
- Gotschall, L. A., & Thompson, C. (1990). Dual assignment an effective clinical teaching strategy. *Nurse Educator, 15*(6), 6,14.
- Graham, M. E. (1995). The relationship between critical thinking and how time is structured in the clinical setting for students in a baccalaureate nursing program. *The ABNF Journal, 149-157*.
- Guba, E. G., & Lincoln, Y. S. (1981). *Effective evaluation: Improving the usefulness of evaluation results through responsive and naturalistic approaches*. San Francisco: Jossey-Bass Publishers.

- Hahnemann, B. K. (1986). Journal writing: Key to promoting critical thinking in nursing students. *Journal of Nursing Education*, 25(4), 213-215.
- Hazelbaker, D. J. (1997). A comparative study examining the effects of alternative methods of teaching mathematics on mathematics. *Dissertation Abstracts International* 58, 08A, AAG9804170.
- Heaslip, P. (1996). *The reading, writing, thinking connection*. Paper presented at the Critical Thinking and Education Reform 17th Annual International Conference, Rohnert Park, CA.
- Herman, J. L., Gearhart, M., & Aschbacher, P. R. (1996). Portfolios for classroom assessment: Design and implementation issues. In R. Calfee & P. Perfumo (Eds.), *Writing portfolios in the classroom* (pp. 27-59). Mahwah: Lawrence Erlbaum Associates.
- Hiebert, J. L. (1996). Learning circles: A strategy for clinical practicum. *Nurse Educator*, 21(3), 37-41.
- Higgins, R. N. (1991). *Computer-mediated cooperative learning: Synchronous and asynchronous communication between students learning nursing diagnosis* [online]. Toronto Canada: University of Toronto. Available: <http://www.cybercor.net/rhiggins/thesis/highlitb.html>
- Hill, B., & Ross, C. (1996). Using cooperative learning approaches in the instructional method of performance-based communication courses. Annual Meeting of the Southern States Communication Association, Memphis, TN. (ERIC Document Reproduction Service No. ED 399 589)
- Holmes, V. (1997). Grading journals in clinical practice: A delicate issue. *Journal of Nursing Education*, 36(10), 489-491.
- Houston, S. S. (1990). Effects on team building instruction on students' knowledge. *Masters Abstracts International*, 29(02), AAG1342125.
- Infante, M. S. (1981). Toward effective and efficient use of the clinical laboratory. *Nurse Educator*, 16-19.
- Infante, M. S., Forbes, E. J., Houldin, A. D., & Naylor, M. D. (1989). A clinical teaching project: Examination of a clinical teaching model. *Journal of Professional Nursing*, 5(3), 132-139.

- Jacobson, J. M. (1989, April 6). *Writing a conversation: Journals in the college classroom*. Paper presented at the National Council of Teachers of English, Charleston, SC.
- Jaramillo, J. A. (1996). Vygotsky's socio-cultural theory and contributions to the development of constructivist curricula. *Education, 117*(1), 133-141.
- Jenks, J. M. (1992). Nurse clinical decision making: A naturalistic inquiry. *Dissertation Abstracts International, 53*, 65A, AAG922789.
- Jenks, J. M. (1993). The pattern of personal knowing in nurse clinical decision making. *Journal of Nursing Education, 32*(9), 399-405.
- Jinks, G. H. (1991). Making the most of practical placements: What the nurse teacher can do to maximize the benefits for students. *Nurse Education Today, 11*, 127-133.
- Johnson, C. W., Johnson, R. T., et al. (1998). Cooperative learning returns to college. *Change, 30*(4), 26-36.
- Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1994). *Cooperative learning in the classroom*. Alexandria: Association for Supervision and Curriculum Development.
- Johnson, D. W., Johnson, R. T., & Smith, K. A. (1998). *Active learning: Cooperation in the college classroom*. Edina: Interaction Book Company.
- Kim, J. G., Cohen, A. S., Booske, J. H., & Derry, S. J. (1998). Application of cooperative learning in an introductory engineering course. American Educational Research Association, San Diego, CA. (ERIC Document Reproduction Service No. ED 420 218)
- Klaassens, E. (1992). Strategies to enhance problem solving. *Nurse Educator, 17*(3), 28-31.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs: Prentice-Hall.
- Krichbaum, K. (1994). Clinical teaching effectiveness described in relation to learning outcomes of baccalaureate nursing students. *Journal of Nursing Education, 33*(6), 306-315.

- Kozier, B., Erb, G., Blais, K., & Wilkinson, J. M. (1995). *Fundamental of nursing: Concepts, process, and practice* (5th ed.). Redwood City: Addison-Wesley.
- Lambright, L. L. (1995). Creating a Socratic seminar and dialogue. *Community College Journal*, 65(4), 30-34.
- Land, L. (1998). The role of talk in kindergarten children's construction of story. *Dissertation Abstracts International*, 59, 01A, AAG9823156.
- Landeen, J., Byrne, C., & Brown, B. (1995). Exploring the lived experiences of psychiatric nursing students through self-reflective journals. *Journal of Advanced Nursing*, 21(5), 878-885.
- Lee, M., & Greene, G. J. (1999). A social constructivist framework for integrating cross-cultural issues in teaching clinical social work. *Journal of Social Work Education*, 35(1), 21-39.
- Leininger, M. M. (1985). Nature, rationale, and importance of qualitative research methods in nursing. In M. M. Leininger (Ed.), *Qualitative research methods in nursing* (pp. 361). Orlando: Grune & Stratton.
- Lim, L. P., & Chen, A. Y. (1999). Challenges and relevance of problem-based learning in dental education. *Europe Journal of Dental Education*, 3(1), 20-26.
- Malbry, L. (1999). Writing to the rubric. *Phi Delta Kappan*, 80(9), 673-680.
- Malek, C. J. (1986). A model for teaching critical thinking. *Nurse Educator*, 11(6), 20-23.
- Martin-Kniep, G. O. (1998). *Why am I doing this?* Portsmouth: Heinemann.
- McInerney, V. (1996). Students' attitudes towards cooperative, self-regulated learning versus teacher-directed instruction in a computer training course: A qualitative study. Annual Meeting of the American Education Research Association, New York, NY. (ERIC Document Reproduction Service No ED 394 499)
- Merriam, S. (1998). *Qualitative research and case study applications in education* (2nd ed.). San Francisco: Jossey-Bass Publishers.
- Mezirow, J. (1990). *Fostering critical reflection in adulthood: A guide to transformative and emancipatory learning*. San Francisco: Jossey-Bass.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco: Jossey-Bass.

- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks: SAGE Publications.
- Moss, C. M. (1997). *Systematic self-reflection: Professional development for the reflective practitioner*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago.
- Mower, P. A. (1995). Writing to learn college algebra. *Dissertation Abstracts International*, 57, 03A, AAI9623670.
- National Educational Goals Panel. (1994). *The national education goals report: Building a nation of learners*. Washington, DC: U. S. Government Printing Office.
- National League for Nursing Association Commission. (1997). *Interpretive guidelines for standards and criteria: Associate degree programs in nursing*. New York: National League for Nursing.
- Necessary, J. R., & Whilhite, S. C. (1996). Effects of a cooperative learning strategy on academic achievement and personal and social attributes in an introductory college computer course. Annual Meeting of the American Education Research Association, New York. (ERIC document Reproduction Service No ED 398 808)
- Northouse, L. L., & Northouse, P. G. (1998). *Health communication: Strategies for health professionals* (3rd ed.). Stamford, CT: Appleton & Lange.
- Oermann, M. H. (1997). Evaluating critical thinking in clinical practice. *Nurse Educator*, 22(5), 25-29.
- Oermann, M. H., & Standfest, K. M. (1998). Differences in stress and challenge in clinical practice among ADN and BSN students in varying clinical courses. *Journal of Nursing Education*, 36(5), 228-232.
- Osana, H. P. (1998). Designing effective instruction toward the development of correlation reasoning in middle school. *Dissertation Abstracts International*, 59, 05A, AAG9825728.
- Palmer, P. P. (1998). *The courage to teach: Exploring the inner landscape of a teacher's life*. San Francisco: Jossey-Bass Publishers.
- Paterson, B. L. (1994). Developing and maintaining reflection in clinical journals. *Nurse Education Today*, 15(3), 211-220.

- Patton, J. G., Woods, S. J., Agarenzo, T., Brubaker, C., Metcalf, T., & Sherrer, L. (1997). Enhancing the clinical practicum experience through journal writing. *Journal of Nursing Education, 36*(5), 238-240.
- Paul, R. W. (1993). *Critical thinking: What every person needs to survive in a rapidly changing world*. Santa Rosa: Foundation for Critical Thinking.
- Paul, R. W., & Heaslip, P. (1995). Critical thinking and intuitive nursing practice. *Journal of Advanced Nursing, 22*(1), 40-47.
- Perciful, E. G., & Nester, P. A. (1996). The effect of an innovative clinical teaching method on nursing students' knowledge and critical thinking skills. *Journal of Nursing Education, 35*(1), 23-27.
- Pesuit, D. J. (1992). Metacognitive skills in diagnostic reasoning: Making the implicit explicit. *Nursing Diagnosis, 3*(4), 148-154.
- Pezeshki, G. H. (1998). The effect of an innovative approach on improving mathematics achievement on Mexican-American students enrolled in college algebra classes. *Dissertation Abstracts International 59, 10A, AAG9909714*.
- Piaget, J. (1932). *The moral judgment of the child* (M. Gabian, Trans.). New York: Routledge & Kegan Paul.
- Pitts, T. P. (1985). The covert curriculum: What does nursing education really teach? *Nursing Outlook, 33*(1), 37-42.
- Reilly, D. E., & Ommerman., M. H. (1992). *Clinical teaching in nursing education* (2nd ed.). New York: National League for Nursing.
- Reinertsen, P. S., & Well, M. C. (1993). Dialogue journals and critical thinking. *Teaching Sociology, 21*(2), 182-186.
- Reynolds, A. (1994). Path-Flow Diagraming: A strategy for critical thinking and clinical decision making. *Journal of Nursing Education, 33*(7), 333-336.
- Rossignol, M. (1997). Relationship between selected discourse and strategies and student critical thinking. *Journal of Nursing Education, 36*(10), 467-75.
- Rubensfield, M. B., & Scheffer, B. K. (1995). *Critical thinking in nursing: An interactive approach*. Philadelphia: J. B. Lippincott Company.

- Rupnow, K. C. (1996). Effects of cooperative learning on beginning algebra students in the small private liberal arts college. *Dissertation Abstracts International* 58, 01A, AAG979086.
- Russaw, E. H. (1997). The personally perceived problem technique: Enhancing clinical instruction. *Nurse Educator*, 22(4), 36-40.
- Saylor, C. R. (1990). Reflection and professional education: Art, science, and competency. *Nurse Educator*, 15, 8-11.
- Schoeman, S. (1997). Using the Socratic methods in secondary teaching. *National Association of Secondary School Principals*, 81(587), 19-21.
- Schön, D. A. (1983). *How professionals think in action*. United States: Basic Books.
- Schön, D. A. (1991). *The reflective practitioner*. Aldershot: Arena.
- Schumacher, J. (1996). Building bridges for future practice: An innovative approach to foster critical thinking. *Journal of Nursing Education*, 35(1), 31-33.
- Scott, J. N., Market, R. J., & Dunn, N. M. (1998). Critical thinking: Change during medical school and relationship to performance in clinical clerkships. *Medical Education*, 32(1), 15-18.
- Sedlak, C. A. (1997). Critical thinking of beginning baccalaureate nursing students during the first clinical nursing course. *Journal of Nursing Education*, 36(1), 11-17.
- Seschachari, N. C. (1994). Instructor-mediated journals. *College Teaching*, 42(1), 7-11.
- Shamina, J. (1991). Effect of teaching decision analysis on student nurses' clinical intervention decision making. *Research in Nursing & Health*, 14, 59-66.
- Sharan, Y., & Sharan, S. (1990). Group investigation expands cooperative learning. *Educational Leadership*, 47(4), 17-21.
- Slavin, R. (1988a). Cooperative learning and student achievement. *Educational Leadership*, 46(2), 31-33.
- Slavin, R. (1988b). The cooperative revolution in education. *Education Digest*, 63(1), 22-24.
- Slavin, R. (1989). Cooperative learning and student achievement. *The Education Digest*, 63(5), 15-17.

- Slavin, R. (1989/1990). Research on cooperative learning: Consensus and controversy. *Educational Leadership*, 47(5), 52-54.
- Springer, L., Stanne, M. E., & Donovan, S. S. (1999). Effects of small-group learning on undergraduates in science, mathematics, engineering, and technology: A meta-analysis. *Review of Education Research*, 69(1), 21-51.
- Stake, R. E. (1985). Case study. In J. Nisbet (Ed.), *World year book of education 1985 research, policy and practice* (pp. 278-285). New York: Nichols Publishing.
- Stake, R. E. (1994). Case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 236-247). Thousand Oaks: SAGE Publications.
- Stern, K. A. (1996). Scripted cooperation and explicit incentives: Impact on cognitive and affective outcomes. *Dissertation Abstracts International* 57, 11A, AAG9711484.
- Tanner, C. A. (1994). On clinical teaching. *Journal of Nursing Education*, 33(9), 387-388.
- Tanner, C. A., & Lindeman, C. A. (1987). Research in nursing education: Assumptions and priorities. *Journal of Nursing Education*, 26(2), 50-59.
- Taylor, C. (1997). Problem solving in clinical nursing practice. *Journal of Advance Nursing*, 26(2), 329-336.
- Teasley, S. D. (1995). The role of talk in children's peer collaborations. *Developmental Psychology*, 31(2), 207-220.
- Thompson, C., & Sheckley, B. G. (1997). Differences in classroom teaching preferences between traditional and adult BSN students. *Journal of Nursing Education*, 36(4), 163-169.
- Tryssenaar, J. (1995). Interactive journals: An educational strategy to promote reflection. *American Journal of Occupation Therapy*, 49(7), 695-702.
- Tsychikota, S. (1993). The clinical decision-making processes of student nurses. *Journal of Nursing Education*, 32(9), 389-397.
- Tuckman, B. W. (1965). Developmental sequences in small groups. *Psychological Bulletin*, 63(6), 384-399.
- Van Gyn, G. H. (1996). Reflective practice: The needs of professions and the promise of cooperative education. *Journal of Cooperative Education*, 32(2), 103-131.

- Walton, J. C. (1996). The changing environment: New challenges for nursing education. *Journal of Nursing Education, 35*(9), 400-405.
- Wang, A. M., & Blumber, P. (1983). A study on interaction techniques of nursing faculty in the clinical area. *Journal of Nursing Education, 22*(4), 144-149.
- Warner, M., Ford-Gilboe, M., Laforet-Fliesser, Y., Olson, J., & Ward-Griffin, C. (1994). The teamwork project: A collaborative approach to learning to nurse families. *Journal of Nursing Education, 33*(1), 5-13.
- Wathen, S. H., & Resnick, L. B. (1997). Collaborative vs. individual learning and the role of explanations. Annual Meeting of the American Educational Research Association, Chicago. (ERIC Document Reproduction Service No. ED 409 339)
- Watson, G. A. (1996). The use of small-group instruction to support remedial students in college mathematics. *Dissertation Abstracts International, 57*, 07A, AAG9639372.
- Whiteside, C. (1997). A model for teaching critical thinking in the clinical setting. *Dimensions of Critical Care Nursing, 16*(3), 152-161.
- Wilson, M. E. (1994). Nursing student perspective of learning in a clinical setting. *Journal of Nursing Education, 33*, 81-86.
- Wong, D. L. (1997). *Whaley & Wong's essentials of pediatric nursing* (5th ed.). St. Louis: Mosby.
- Wong, F. K. Y., Loke, A. Y., Wong, M., Tse, H., Kan, E., & Kember, D. (1997). An action research study into the development of nurses as reflective practitioners. *Journal of Nursing Education, 36*(10), 476-481.
- Yin, R. K. (1994). *Case study research* (2nd ed.). Thousand Oaks: Sage Publications.
- Zacharias, M. E. (1991). The relationship between journal writing in education and thinking processes what educators say about it. *Education, 112*(2), 265-270.
- Zeller, N., & Farmer, F. M. (1999). Catchy, clever titles are not acceptable: Style, APA, and qualitative reporting. *International Journal of Qualitative Studies in Education, 12*(1), 17-20

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