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THE IMPACT OF A REFLECTIVE THINKING INTERVENTION ON NURSING
STUDENTS IN A CHILD AND FAMILY NURSING COURSE

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A Dissertation Submitted to The Graduate School at the
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ABSTRACT

With the ever-changing healthcare systems, nurses are responsible to care for complex patients; ensure physician orders are correct, appropriate for the patient, and completed; prevent medication errors; prevent infections from occurring; and transition patients from the hospital setting to home. Nursing students need to think at a high level by applying their knowledge from theory to the clinical setting by prioritizing, delegating, and problem solving to provide safe, competent, quality nursing care.

Using action research, nursing students were examined by providing R.A.V.E. (Reflective Thinking Allows Variety for Excellence) Reviews to see how they used their past experiences and their knowledge and beliefs to arrive at the appropriate answers and/or solutions to exam questions and real life situations to arrive at the appropriate answers and/or solutions to exam questions and real life situations. It proposes that a reflective thinking intervention plays an important factor in the learning process, emotional intelligence, and professional development of nursing students in a Child and Family Nursing Course. A purposive sample of 65 nursing students in the course from semesters Spring 2010 and Fall 2010 from a Midwest College of Nursing within a university setting were used.

Grounded theory was used to analyze the data. Three categories emerged from the data: (a) facilitation of the learning process; (b) emotional intelligence; and (c) professional development. Students commented that the reflective thinking intervention helped them study sooner, recognize what they knew and did not know, think at a deeper

level, listen and see other individuals' perspectives, and question information which may be unclear or inappropriate for the situation.

With students needing to make connections between theory and clinical practice, conducting R.A.V.E. Reviews may be that bridge between the classroom and hospital setting. Students demonstrated a greater self-confidence, emotional intelligence, ability to question information, and a higher level of thinking ability which assisted them in answering real life nursing questions and achievement in a Child and Family Nursing course. It was suggested that nursing students need time to think about the questions, situations, or scenarios to arrive at the best solution. While providing the time to think, the importance of their surroundings was noted. The environment was relaxed, non-intimidating, fun, open, informal, respectful, and active. While this intervention was optional, students were informed before attending that all students would participate. This was a positive quality frequently mentioned by the students. The most useful activities were questioning, discussion, and talking out loud. These activities encouraged students to question any information which does not sound appropriate, talk about it with colleagues, and dissect the information by talking out loud.

While the R.A.V.E. Reviews provided guidance on how to use reflective thinking activities to achieve and succeed in a Child and Family Nursing course, the Reviews also allowed the students to realize the importance of taking time to think about situations in a relaxed, non-intimidating environment where they were able to hear multiple perspectives through discussions and talking out loud in order to identify rationales and solutions for the situations. Since healthcare is always changing, nurses are required to

know what to do in any client situation. Therefore, providing the R.A.V.E. Reviews for nursing students allows them to use reflective thinking activities in seeing the whole client situation and making decisions.

ACKNOWLEDGMENTS

As I began this journey in the Fall of 2006, I never thought I would endure so many challenges in my life. This journey has provided personal, professional, and academic growth through tears, laughs, and heart to heart conversations. Many individuals have provided encouragement and support during this time. However, the three key individuals to keeping me plowing ahead in this journey were my husband, Randy, and my two ever-loving Yorkies, Lindsay and April! My husband kept telling me “If anyone can do it, you can!” while Lindsay and April sat in my home office with me as I was reading, transcribing, and writing.

During this entire journey, I met many individuals through classes, library time, and networking. First of all, Dr. Paulette Isaac has been a great inspiration to me from my first course I took in my PhD program. From day one, I knew Dr. Isaac was my role model. She loves teaching and is willing to go the extra mile to offer feedback. As the Chair of my committee, she has heard me say “I want to quit” to “I am going to quit” to “I guess I will finish”. However, her words always included “You are not going to quit” or “I never want to hear those two words again”. I can definitely say this was the most challenging experience I have ever endured, and I say “Thank you Dr. Isaac for the shove to continue this journey to meet the end!” I truly value everything you have said to me and trust you with all my heart!

Another member of my dissertation committee and College of Education faculty to mention is Dr. Wolfgang Althof who provided several high, fiery challenges during the journey. Again, participating in two courses taught by Dr. Althof, I knew I wanted him

on my committee. However, after the challenges became higher, I was wondering “why” I chose this path. In the long run, I have to say “thank you” for the extra challenges because my study became stronger with richer data to support the findings, and I have grown to be a much stronger individual.

Other “thanks” go to Dr. Sue McKee and Dr. Lloyd Richardson who have served on my committee and provided excellent feedback along the way. Without these wonderful individuals’ willingness, knowledge, and support, my journey would never have ended with the amount of knowledge and growth achieved.

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CHAPTER ONE: INTRODUCTION

“Nursing knowledge and learning processes for the future require much more thought contemplation, and reflection upon the very concepts and phenomena associated with dramatically changing human conditions and life processes” (Watson, 2000, p. 38).

“What do I need to study for the exam next week?” or “Will there be a study guide?” are questions I have frequently heard before administering the first exam in the Child and Family Nursing Course. In this course, several areas of concentration are prevention of illness and maintenance of health, pathophysiology of diseases, nursing interventions and management to provide safe and quality nursing care for children who are sick, and inclusion of the family for the planning and care of their child. Topics include, but are not limited to, genitourinary, integumentary, and hematology conditions in children. Reflecting on these questions I have frequently heard, I wonder if other educators encounter these questions in their courses? What is the typical manner in which students prepare for exams? Do students understand the information they read, hear, and see in order for them to apply and synthesize it to real life situations?

With memorizing and recalling being two of the more common techniques practiced by many students, I realize why these questions arise. Rote memorization and recall is noted to answer lower-level thinking questions, but these techniques have not proven successful for students required to answer higher-level thinking questions (Renaud & Murray, 2007). Watters and Watters (2007) found that students depend on memorizing information which teachers present in lecture or based on teacher prepared

study guides for exams. It is believed by Watters and Watters (2007) that these students do not make the connection of how to use the information in a real life situation.

During the past four years, I have observed senior-level nursing students wanting to know exactly what will be covered and asked on the upcoming exam. Other students have verbalized the need for study guides so they know what to study and not to study. Study guides and/or faculty verbalizing guidelines about what to study for the exam results in frequent failure to acquire strong problem-solving and reasoning skills (Benner, Sutphen, Leonard, & Day, 2010). However, when nursing students have entered the Child and Family Nursing classroom, I have explained to them that there will be no study guides, and I will not tell them which information will be on the exam except to say that assessments involve “The assigned chapters for reading, the discussion held in class, the information from the power point slides, and any other supplemental materials.”

While meeting with students to discuss how they prepare for class and their study habits, memorization and recall were two of the more common techniques practiced by the students. It was then I realized the reason many students were having difficulty answering the questions on the exams in the Child and Family Nursing course. The questions on the exams in the Child and Family Nursing course are written to be high level thinking questions which require students to apply or analyze the information. As Watters and Watters (2007) have mentioned, memorization and recall are not sufficient to answer this type of question.

Another point of discussion when meeting with students was the amount of time students spent studying for exams. For instance, I have frequently heard students say, “I

studied over 30 hours for your exams”, and the expectations of the students are to receive “A’s” because they are entitled to it. Research has shown that the number of hours students’ study has a small effect on their grades (Plant, Ericsson, Hill, & Asberg, 2005; Shuman, Walsh, Olson, & Etheridge, 1985). The comparison of quantity of hours studying versus the quality of hours studying is an important factor. Students who are disciplined, have a study plan, and study daily tend to achieve higher grades (Plant et al., 2005; Rau & Durand, 2000). With this information, this could be an important factor in study habits of students. For deep learning to occur, students need to be engaged, involved, and supported (Pascarella & Terenzini, 2005). Students who strive to do their best, have a commitment to their academic success, and believe academics are more important than leisure activities have the highest achieved grades (Pascarella & Terenzini, 2005; Rau & Durand, 2000).

Another important factor noted in the research of study habits of students is out-of-class experiences. These experiences provide students an opportunity to enhance their mastery of the information provided from reading, assignments, and/or during the classroom teaching (Reason, Terenzini, & Domingo, 2006; Pascarella & Terenzini 2005; Strauss & Terenzini, 2005).

The educator’s responsibility is to prepare students for the ever-changing healthcare field. For instance, nurses not only encounter situations with which they are familiar, but at times they are presented with challenging and complex conditions. For example, a child with a rare congenital anomaly or a rare brain tumor in which the plan of care may include interventions and management not commonly performed tends to make

nurses uncomfortable. Thus, memorization of classroom information may not be the most appropriate method to prepare students to provide safe and quality nursing care. This indicates the importance of students learning more than the basic information included on a study guide or being told during a lecture. With the frequent and many changes, students will need to realize that learning is a lifelong endeavor for them.

The health care field will continue to become more complex which will require nurses to know, understand, apply, and synthesize the information with which they are provided. Nurses will also need to be prepared to be lifelong learners in order to provide the safest and most competent nursing care. Benner, Sutphen, Leonard, and Day (2010) believe that being a reflective practitioner will provide nurses the ability to confront these ever-changing complex health care needs.

A growing recognition in the nursing field is the over-reliance on memorization which weakens students' ability to think critically and to apply knowledge in the real world (Benner, Sutphen, Leonard, & Day, 2010). From the beginning of the semester, students know I am available to help and my goal is for them to succeed. However, students need to take responsibility to ask for help. Students have shared with me their study strategies which have included memorizing facts, "skimming" the chapters, and reviewing class notes and handouts. Frequently, students mention studying for more than 20 – 30 hours for an exam in this course and feel they should be rewarded with the "A" they are accustomed to receiving. They also document on mid-semester evaluations that exam questions require much thinking in order to obtain the correct answer. Although

these study strategies have all been adequate in the past to successfully complete a nursing course, students claim “It is not working for this course. What can I do?”

The American Association of Colleges of Nursing (AACN, 2008) provides colleges of nursing with information that is required in the baccalaureate nursing curricula. This information is found in the new *Essentials of Baccalaureate Education for Professional Nursing Practice* (2008). In this document, the AACN identified nursing as the key contributor in healthcare for providing safe and high quality client care in a cost-effective manner.

As nursing continues to change with the improvement in technology, advances in science through research, changing characteristics and quality of client populations, and access to healthcare information via the Internet, changes in nursing education are necessary. The AACN (2009) explains these changes in nursing as “forces” and states, “these forces call for new ways of thinking and providing health care” (p. 6). The AACN has mentioned that new ways of thinking are necessary, and they identify using active and integrative learning strategies as approaches to implement in the nursing curriculum.

One such method is the use of a reflective journal. Nursing students throughout the United States are using reflective thinking in the form of reflective journals (Callister, Luthy, Thompson, & Memmott, 2009; Conceicao & Taylor, 2007; Plack & Greenberg, 2005). Conceicao and Taylor (2009) found that nursing students who are required to complete reflective journals learn prioritization and decision making. Through journal writing, educators can review the thought process students are using and provide feedback to the students which provides students the opportunity to improve competence

(Plack & Greenberg, 2005). Through the reflective journals, students shared their feelings, emotions, thoughts, and actions which occur in certain situations. Callister et al. (2009) explained that journals allow students to recognize what really occurs in real life situations and promotes student learning without intimidation.

Reflective thinking contributes to the occurrence of deep learning (Cangelosi, 2008; Plack & Greenberg, 2005; Wittmann-Price & Godshall, 2009), a holistic way of looking at situations (Dewey, 1910; Jarvis, 2006; Johns, 2004; Schon, 1987), and an improved self-confidence (Cangelosi, 2008; Ireland, 2008; Torsvik & Hedlund, 2008). The information on reflective thinking is abundant, but I have noted limited use as a way of facilitating learning for nursing students. Dewey (1910), Johns (2004), Plack and Greenberg (2005), and Schon (1987) provide explanations of reflective thinking in areas such as architecture, engineering, agriculture, and the medical field including physicians and nurses.

Reflective thinking has been described in a variety of ways. As Dewey (1910) explained, reflective thinking is like “turning a topic over in various aspects and in various lights so that nothing significant about it shall be overlooked—almost as one might turn a stone over to see what its hidden side is like or what is covered by it” (p. 57). Johns (2005) identified the above aspects of reflective thinking along with, “reflection-within-the-moment” and “mindful practice” (p. 6). Johns (2005) explained “reflection-within-the-moment” as being aware of the feelings, thoughts, and actions within a given moment and talking to one self to decide how one should respond or how the situation

should be broken down. “Mindful practice” is explained by Johns (2005) as being self aware.

Plack and Greenberg (2005) believed reflective thinking allowed connections between information to occur. They looked at the health care field and saw that those physicians and nurses who questioned orders or ideas, thought about the actions to take, and shared information with colleagues used reflective thinking as a learning strategy to achieve favorable outcomes for the clients. In addition, Schon (1987) mentioned that reflective thinking is thinking about what happened in the past, as to what went well, what needs improvement, and what changes can be made. Schon (1987) also revealed adapting the changes and looking at what occurs because of the changes made, and thinking if the changes were appropriate and should be continued, or if other steps should be taken.

Reflective thinking was noted by King and Kitchener (2004) to be a slow process, but when students use reflective thinking, students “graduated with higher scores” (p. 16). The higher scores meant that those students challenged the facts or information by reflecting on their past knowledge and/or experiences and were willing to “think through ideas” to achieve the answer or solution (King & Kitchener, 2004, p. 16).

Magolda and King (2008) encouraged faculty to tell students to take a step back and think about situations and “make sense” of them by comparing previous experiences and knowledge (p. 10). Su, Osisek, Montgomery, and Pellar (2009) explained the importance of faculty providing students with learning activities which allow students to use decision-making skills in classroom teaching to familiarize students with this aspect.

Providing this type of activity for the students allows the instructor the opportunity to provide feedback to the students on how correctly they are thinking or what needs to be improved. Su et al. encourage faculty to assist students with this process so students can practice decision making and problem solving skills.

With this information, Magolda (2008), King and Kitchener (2004), and Su et al. (2009) expressed the need to promote the development of reflective thinking in students as a tool to achieve interventions and decision-making solutions necessary in today's changing world which seems to reiterate what Dewey (1910), Schon (1987), and Johns (2005) explained about reflective thinking. Rothblum, Kneist, and Caputi (2009) suggested the importance of being able to make decisions and problem solve, but also identify the benefits of providing immediate feedback to students and clarifying their thinking.

The Problem Statement

The complexity of health care continues to grow and the responsibility of the bedside nurse continues to expand. The nurse not only is responsible for caring for the client, but also ensuring the physicians' orders are correct, appropriate, and implemented for the clients. Nurses use reflective thinking on a consistent basis (Forneris & McAlpine, 2009) to provide safe and competent care for their clients. Through sharing, dialogue, and questioning, nurses distinguish practices which work best and those which do not. Nurses learn to use reflective thinking while they are working with clients, whereas nursing students may be exposed to the method of reflective thinking only through journaling. If journaling is a useful method to improve student learning and reflective

thinking is helpful for nurses to strengthen the safe and competent care for clients, what effect does a reflective thinking intervention, as an out of class experience, have on nursing students' learning?

Nursing coursework often focuses on the information needed to pass standardized tests and under emphasizes how to *think about* and *analyze* information when it is applied in real life situations and skills needed in actual health care settings. Not only in nursing education are standardized exams used, but also in education (Wallace & Williams, 2003), psychology (Hautau et al., 2006), and sociology (Holtzman, 2008). Exams are used to evaluate student learning, but need to include higher level thinking questions which allow evaluation of students' ability to apply, analyze, and synthesize the material they studied.

Hautau et al. (2006) as well as Wallace and Williams (2003) evaluated students who were given a writing assignment and those who were not in their performance in answering higher level thinking, multiple-choice questions. Holtzman (2008) studied the addition of giving quizzes, a lecture on how-to answer multiple-choice questions, and in-class activities and assignments on the performance of students in answering the higher level thinking, multiple-choice questions. Each of these authors found a significant difference in student performance on the exams when adding interventions. There is debate about the limitations of multiple-choice exams. The debate revolves around the ability of multiple-choice exams to elicit higher level thinking questions. Wallace and Williams (2003) compared students' performance on an essay exam and on a multiple-choice exam, finding that the students' performance was similar. For instance, students

were able to provide explanations for the answers picked in the multiple-choice exams which showed their understanding, applicability, and analysis of the information.

Multiple-choice exam questions fall into categories or levels in Bloom's Taxonomy (1956). In this classification system, Bloom (1956) distinguishes the different levels of questioning. For instance, the first level is knowledge. Bloom (1956) noted this is when a student is able to recall information. Comprehension is the next level, whereby students understand the information and are able to summarize it. The next level is application. In this level, students use the information to address situations, problems, or issues. The fourth level is analysis. Students are able to take the information obtained and see the relationship or connection it has in the situation, that is they can break information into constituent parts. Synthesis is the next level, whereby students can take all the pieces of information and put them together to form a whole situation or picture. The final level is evaluation, and Bloom (1956) notes that students at this level determine the effectiveness of the information.

Once nursing students are in their senior year of nursing school, answering the higher level thinking questions is necessary. For nursing students to plan the care of a client, provide an immediate response to a client who is getting worse, or care for several clients who all have immediate concerns, it is necessary to think about what is priority, what to do in the situation, and how to handle the other situations competently.

Many students have trouble answering higher level thinking questions (Entwistle, 2009; Pascarella & Terenzini, 2005). In our ever-changing environment in health care, nursing students need to be prepared to apply, analyze, and synthesize information from

many sources. The hospital setting will not provide a simple situation which requires simple memorization or recall. It will require the higher level thinking which the exams given in a Child and Family Nursing course provide. Using higher level thinking questions may also assist students to make decisions and problem solve in real life situations. While class time is needed to introduce information to the students, facilitate their learning, and clarify any information which is unclear, I decided out-of-class learning experiences (Gynnild, Holstad, & Myrhaug, 2007; Lee, 2006; Neef et al., 2007) were needed that involved allowing students to use reflective thinking activities. Learning workshops which provide complex course information was introduced by Morton (2006) to strengthen students' testing ability and thought processes. She believed these workshops assisted students in answering the application, analysis, and synthesis level questions.

Purpose and Research Questions

The purpose of this study was to explore the impact of a reflective thinking intervention that utilizes reflective thinking activities with nursing students. More specifically, the goal was to examine how nursing students think about past experiences, their knowledge and beliefs (or assumptions) through discussing, questioning, and thinking out loud in order to arrive at the appropriate answers and/or solutions to exam questions and real life situations. With this in mind, the primary research question was as follows:

Does a reflective thinking intervention influence nursing students' preparation for exams and achievement in a Child and Family Nursing course?

Related questions were: How do reflective thinking activities impact the study habits of nursing students? What factors affect the learning environment during a reflective thinking process to make it conducive to learning? What changes, if any, do nursing students notice about themselves personally, professionally, and/or academically after participating in a reflective thinking process?

Significance of the Study

The findings of this study will benefit not only nursing students, but also nursing instructors, graduate nursing student employers, clients receiving the nursing care, and any discipline that uses standardized exams which include higher level thinking questions to evaluate student learning. For nursing students, it may present a new way of thinking about preparing for and completing exams, problem solving, and applying information to real life situations with intentions to provide a lifelong learning process. For nursing instructors and employers, the findings may foster students' clinical judgment and reasoning and understanding of clinical situations which may enhance safe and quality nursing care for the clients. As for any discipline using standardized exams with higher level thinking questions, it may enhance students' imagination, reasoning, and lifelong learning. The findings from this study may broaden adult education by improving job preparedness, promoting productivity, and assisting goal achievement.

Assumptions

Based on my teaching experience with nursing students over the past four years, two assumptions were made regarding this study. First, I believed nursing students were accustomed to learning by memorizing facts, being provided study guides which include

the information on exams, or being taught only the need to know information. Secondly, the participating nursing students completed assigned work to participate in a R.A.V.E. Review.

Definition of Terms

Achievement: Obtaining a score equal to or above 76%.

Higher level thinking questions: Questions which are categorized in Bloom's (1956) Taxonomy of application, analysis, synthesis, or evaluation levels.

Informal learning environment: An environment in which students feel safe, respected, non-intimidated, actively participate, and a sense of accomplishment.

Out of class learning experiences: Sessions which provide students an opportunity to review, question, and/or learn class materials outside of class time.

Post-conference: A debriefing session that is held after students have completed clinical practice hours.

R.A.V.E. Reviews: (Reflective thinking Allows Variety for Excellence) A 2-hour session offered a week before an exam which provides questioning, discussion, and interactive games for students to think out loud in order to receive feedback and clarification.

Reflective thinking: Thinking which utilizes past experiences, knowledge, skills, and observations in order to develop thoughts and/or ideas to further one's knowledge.

Reflective thinking intervention: An active, progressive, developmental process of building on prior knowledge, experiences, skills, and assumptions while observing,

listening, discussing, and questioning information in order to address aspects required for understanding and competence in professional education.

Reflective thinking activities: Any activity which incorporates students' thinking and identifying: (a) what they know, (b) actions that were taken during a past experience, (c) other students' perspectives; and (d) information they need to improve on.

Chapter Summary

This chapter described the problem, purpose, and research question that set in place a research study. The interconnectedness of the components is stressed and described as the core of the research. In addition to these components, the chapter also described other elements, such as rationale and significance, researcher assumptions, and definitions of key terminology.

Chapter two provides a clear picture of current concepts, theories, and data relevant to reflective thinking. What is known about reflective thinking, the strengths and weaknesses of existing studies, and the gaps or holes in nursing education on reflective thinking will be discussed.

CHAPTER TWO: REVIEW OF THE LITERATURE

“The purpose of adult education is to give meaning to the categories of experiences, not to classifications of knowledge” (Lindeman, 1961, p.123).

The purpose of this action research study was to explore the influence, if any, that a reflective thinking intervention might have had on nursing students in a Child and Family Nursing course in a Midwestern university with a College of Nursing program. To carry out this study, it was necessary to complete a review of current literature. This chapter includes an examination of the literature of study habits, adult learning, and reflective thinking. It concludes with a summary of the literature.

Study Habits

When thinking about the study habits of students, several concepts come to mind. As mentioned earlier, memorization, and recall are two of the more common techniques practiced by many students. However, Entwistle (2009) mentions that memorization and recall are acceptable if lower-level thinking questions are asked, and students accept being a surface learner. She goes on to explain that a surface learner is one who looks at the parts individually and memorizes the facts about each individual part. Whereas, deep learners are able to see the whole picture; they can take the information and see the relationship of the information to the situation and make the appropriate connections to develop a plan (Entwistle, 2009). For instance, learners who can take all the parts and put them together and understand the effect each has on the other are able to think and make decisions.

Students frequently mention the amount of time they spend studying for exams. For instance, some students mentioned that they spent 20 to 30 hours studying for an exam in the Child and Family Nursing course. However, in addition to the amount of time spent studying, the quality of the time studying needs to be assessed (Plant, Ericsson, Hill, & Asberg, 2005; Shuman, Walsh, Olson, and Etheridge, 1985). If students are studying for 30 hours for an exam, they need to ensure a conscious effort is being made to focus on the information they are studying and understand it in order for them to apply it to higher level questions (Entwistle, 2009) or real life situations.

For those students who wait until the last minute to study, they tend to study the easiest items or the items they know more about before the more difficult items (Wasylikiw, Tomes, & Smith, 2008). Frequently, students know after the first exam the types of questions for which they need to prepare. If the questions are basically factual, they know that memorizing and recall are appropriate methods for them to successfully pass the exam (Wasylikiw et al., 2008) so they wait until the day before an exam.

Then there are students who are disciplined, have a study plan, and study daily who tend to achieve higher grades (Plant, Ericsson, Hill, & Asberg, 2005; Rau & Durand, 2000). These students strive to do their best, have a commitment to their academic success (Pascarella & Terenzini, 2005), and have personal aspirations (Entwistle, 2009). The intention of these students is to understand the information, relate it to past knowledge or experiences, and take responsibility for making the necessary connections needed (Entwistle, 2009).

The challenge seen in the health care field, especially nursing, is to prepare students to be responsible, think, and provide safe and quality care in complex situations (Benner, Sutphen, Leonard, & Day, 2010; Catalano, 2009; Institute of Medicine, 2011). If students are given an opportunity to think about their past experiences and build on those experiences, instructors can provide the support they need to learn (Benner et al., 2010). Beginning with the simple information and ensuring students know that before moving on to the complex information, allows students to understand and apply the information to situations they may encounter (Bain, 2004).

Since nursing entails challenging and complex situations, memorization and recall are insufficient methods to use in clinical situations. These methods allowed students to know individual parts at a basic level, but not the entire person as a whole system which is necessary to give safe and quality nursing care. In addition, since the amount of time spent studying does not determine the grade, students need to realize the quality of time studying is important.

Adult Learning

A question that I have often asked and heard from other educators is “Are college students adult learners?” Another question which arises is “Are college students ready for adult learning?” Merriam (2007) defines adult learning as “a cognitive process internal to the learner; it is what the learner does in a teaching-learning transaction, as opposed to what the educator does. Learning also includes the unplanned, incidental learning that is part of everyday life” (p. 2).

According to Levinson (1978), early adulthood begins around 17 years of age, while Hudson (1999) believes adulthood begins around the age of 18. With the information of adult learning and when adulthood begins, the answers to the questions “Are college students adult learners?” and “Are college students ready for adult learning, in my opinion, may not be clear. On one hand, they may be adults according to their age, but they may not be adult learners. Levinson (1978) mentions that individuals attain certain life experiences at different levels of development; whereas, young adults have not experienced many of the challenges of the middle adulthood individual which affects maturity.

Adults know what they want to learn, what they need to learn, and what they have already learned (Knowles, 1970). Unlike children who look to the adult for guidance, adults are independent. Adult learning involves autonomy and self-direction (Brookfield, 1995; Knowles, 1970, 1973; Merriam, 2001, 2007; Mezirow, 1990; Tough, 1976). Tough (1976) revealed that motivation and planning are important factors in adult learning. Adults are motivated to learn if it pertains to their job, family, sports, and/or hobbies (Tough, 1976). Most adults have a plan they follow in order to accomplish their goals.

The theories, ideas, and assumptions in adult learning are many. Merriam (2001) noted that the possibility of there being one theory or framework of adult learning is unlikely. Merriam (2001) believed three concepts contribute to the adult learning approaches: seeing the adult learner as a whole individual; distinguishing the learning process involves “making sense of our lives”, transforming, and learning from others; and

discovering the “context in which learning occurs” (p. 96). While there are many adult learning theories, for the purposes of this study, I will focus on transformational learning and experiential learning because they provide the framework for reflective thinking.

The concepts pinpointed by Merriam (2001) are described in these theories.

Transformational Learning Theory

As adults progress through life, learning is a daily adventure. Frequently adults believe one thing is true until a crisis or disorienting dilemma (Mezirow, 1990) occurs. Transformational learning was described by Mezirow (1990) as “the process of learning through critical self-reflection, which results in the reformulation of a meaning perspective to allow a more inclusive, discriminating, and integrative understanding of one’s experience” (p. xvi).

Mezirow (2000) believed that transformational learning takes place after a disorienting dilemma occurs in one’s life. This type of learning can occur for anyone. A disorienting dilemma is a situation or occurrence that makes one uncertain or unsure of what to do next (Mezirow, 2000).

For example, in a post-conference involving the children for which care was provided, the students were amazed at the differences in three children who were 15-months-old. The differences included different heart rates, respiratory rates, blood pressures, and actions. The students said that according to the textbook the heart rates, respiratory rates, blood pressures, and actions should be the same, if not comparable. I mentioned to them the textbook is a guideline and does not always provide the correct information for each individual child. That is why as nurses we need to reflect on past

experiences, dialogue, and questioning. We need to look at other aspects which may be affecting these measurements.

The three children we were comparing were all stable for the day even though there was quite a difference in numbers and actions of the children. The students realized that the textbook information was not always the one and only answer, and that each child is different. Learning occurred, but it was not necessarily easy for the students to understand. They verbalized their frustrations and discomfort in learning the textbook information and applying it in a real life situation, and concluding that each child was stable even though the measurements were not comparable. This truly was a time of transformational learning for them.

Subsequently, King and Kitchener (2005) explained that learners experience their lives being turned “upside down” (p. 105). With transformational learning, the focus is on the whole individual which includes intellect, emotions, relationships, and physical well-being. A feeling of uncertainty and fear occurs with transformational learning (Mezirow, 2000). As mentioned in the example of the students in post-conference, which is a debriefing session used after completing a clinical experience, they experienced uncertainty as evidenced by the questions they asked through discussion and sharing with colleagues. The questions asked by the students included “how do I know what is normal if each individual is different?” or “when do I know what are acceptable ranges for heart rate, respiratory rate, temperature and blood pressure?” Again, reflecting on experiences triggers learning and also makes individuals challenge current assumptions and beliefs (Mezirow, 1990).

As individuals develop reflective thinking, changes occur in their lives. They realize the assumptions or beliefs they once held may be changed and a new understanding, assumption, or belief is formed (Brookfield, 2005). Learning is a complex process especially when adults experience change in several areas of their lives (King & Wright, 2003). Frequently, once individuals experience this change, they realize the significance of the change or transformation, and it becomes a habit which provides lifelong learning (Brookfield, 1999; King & Wright, 2003).

Brookfield (1999) noted that teachers who practice reflective thinking realize that this is an ongoing process, and teachers recognize that they never reach a “fully finished” product. Teachers realize that once they use reflective thinking, the more they will continue to use it because of the information attained (Brookfield, 1999). The information attained may be from past mistakes, student and/or colleague responses, or from self reflection. Many of these changes occur not only through reading, dialogue, and sharing, but also from direct hands-on experience. Mezirow (1990) associates learning from experiences to transformational learning. He notes that reflective thinking enhances learning by using past experiences to change the way individuals respond to situations. Several adult education theorists note that learning takes place through a variety of experiences (Chickering, 1977; Jarvis, 1987; Johns, 2005; Merriam & Clark, 1993). These experiences may include knowledge from reading, real life situations, and hands-on learning.

Several challenges have occurred for transformational learning. The role of the educator in planning for a transformational learning experience and its impact are areas

of concern (Merriam, 2001). For instance, the relationship between teacher and learner is important in transformational learning. Identifying that the approach is a “teacher-learner-centered” approach is a step in the right direction (Merriam, 2001, p. 21). This approach is explained as a helping relationship which includes trust and care between the teacher and learner (Merriam, 2001).

Another factor to consider is the education educators receive on ethics. Robertson (1996) considered an ethical need that educators are not educated on how to teach transformational learning, but educators are seen as the “facilitator of learning” (p. 46). Ettling (2006) believed that educators need to take the responsibility to educate themselves which includes listening to individuals’ points of view, realizing that there may be other ways of teaching that improve students’ success, and connecting with others to talk about the changes that occur. Woody (2008) explained that teachers need to realize their roles and responsibilities in teaching and recognize the integrity of each student. Even though ethics seem to be a challenge in transformational learning, it appears that the overall responsibility lies on the educator to be self-directed and accountable.

Another challenge for transformational learning mentioned by Taylor (2001, 2007) is the cultural challenge. Taylor (2001, 2007) mentioned that some individuals respond to the transformation with shock while others adjust and make the best of the situation they encounter. He arrived at this since the unconscious thinking processes individuals use differ because of what they have grown accustomed to and not necessarily because of the reflection and questioning. Taylor (2007) mentioned that the

differences of culture, gender, and age may exist in transformational learning but this has not been researched and/or reviewed.

The setting in which transformational learning occurs provides yet another challenge. Taylor (2007) believed that much transformational learning has occurred in formal environments such as universities and workshops, but he identifies the need to explore the informal, natural environments such as the learning in everyday life. Taylor (2007) mentioned the role of the student in transformational learning as another challenge. He believes the role of the student has not been defined in regard to their responsibilities, participation, and consequences.

Learning that occurs through reflection or from disorienting dilemmas is described as transformational learning (Mezirow, 1990). This transformation or change includes reflecting in action and reflecting on action (Schon, 1987). This type of learning is not comfortable for students, and as Merriam (2001) mentioned the trusting and caring relationship between the teacher and learner is necessary.

Experiential Learning Theory

Adults bring personal experience with them into the classroom and into every aspect of their lives. Past and present experiences affect adults' perception of what they want or need to learn. As Lindeman (1926) stated "Experience is the adult learner's living textbook" (p. 7). Experience is a main factor of adult learning and transformation (Brookfield, 1995; Dewey, 1933; Knowles, 1970; Merriam, 2001). Dewey (1938) speaks of experiential learning in his book *Experience and Education*. It was here that experience was documented to have a learning effect on an individual's education.

However, this does not mean that every experience individuals encounter will be a learning experience. The educator is an important factor in experiential learning. For students to understand learning from experience, it is necessary for the educator to point out situations which occur, ask questions, discuss what actions were taken, and provide feedback to students to identify the direction they should go for future situations (Dewey, 1938). The environment plays a key part in learning from experience (Dewey, 1938). He did not provide any specific aspects which are important in the environment, but that it should be “conducive to having experiences lead to growth” (1938, p. 35). He further stated about the adult learner, “What he has learned in the way of knowledge and skill in one situation becomes an instrument of understanding and dealing effectively with the situations which follow” (1938, p. 42). As adults, learning from each experience provides the lifelong process that occurs with every new day.

Kolb (1984) defined experiential learning as “The process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping experience and transforming it” (p. 41). The grasping of an experience is referred to as prehension which is divided into two separate categories of apprehension and comprehension (Kolb, 1984). Apprehension addresses the concrete or tangible factors, while comprehension addresses the abstract or thinking about, cognitive factors (Kolb, 1984). The main factor in experiential learning is the reflection that occurs after the experience has happened. The experience is not the teaching moment, the reflection on the experience is the teaching moment (Brookfield, 1995; Kolb, 1984; Mezirow, 1990; Schon, 1987).

Carl Rogers (1969) is another theorist who contributed to experiential learning. Not only was he acknowledged for experiential learning, but also for his views of a positive environment for learning to occur. Rogers (1983) identified congruence, unconditional positive regard, and empathy as three conditions under which individuals can learn and develop. According to Rogers (1983), congruence is being open, transparent, and real. It is the genuineness of an individual and not putting on a front or façade. Rogers (1983) explains unconditional positive regard as the acceptance of individuals without passing judgment, which means accepting others for who they are. Lastly, empathy is the ability to understand how another individual feels. Rogers (1983) believed that an environment with these conditions allows for personal change and growth in students because the teacher is a facilitator versus the individual with the power and/or authority. Rogers (1983) explained that an environment with these conditions allows students to make choices, and this includes students choosing what they want to learn and how and when they want to learn (O'Neill & McMahon, 2005).

One critique of experiential learning from Brookfield (1998) acknowledges that if an individual is 30 years old, this does not mean he or she has more knowledge than an individual who is 20 years old. He notes that some experiences are more significant or more meaningful than others. He further explained that individuals tell stories about experiences in order to achieve specific purposes. Other critiques of experiential learning include social inequalities and differing environments (Fenwick, 2001). Fenwick believed that the situations vary from student to student, which acknowledges the social inequalities. She mentioned that these inequalities have an effect on the experiences in

which students participate. She also mentioned that the environment affects the experiences and the students' participation which she believes is a challenge to experiential learning and needs to be taken into consideration.

Dewey (1938) mentioned that not all experiences provide learning, it depends on the educator to guide the students to seek answers. Ensuring that students know why they are doing certain steps before they do them, reflecting on what has been done, and providing a positive environment enhances experiential learning to occur.

The development of reflective thinking grows from these theorists' thoughts and theories. Learning from past experiences (Dewey, 1910; Johns, 2004; Schon, 1987), making changes in beliefs, knowledge, and/or assumptions through reflection (Johns, 2004; Mezirow, 1990), and becoming autonomous and a self-directed learner (Johns, 2004; King & Kitchener, 1994; Knowles, 1973; Tough, 1971) describe the developmental process of reflective thinking. A question which may arise is "Are students' study habits and/or behaviors consistent with autonomous and self-directed learning which is seen in adult learning?"

Reflective Thinking

Critical thinking and reflective thinking have been used interchangeably or defined independently. In order to provide a clear and concise picture, the definitions of both are provided. Glaser (1941) states that critical thinking is:

- (1) an attitude of being disposed to consider in a thoughtful way the problems and subjects that come within the range of one's experiences, (2) knowledge of the methods of logical inquiry and reasoning, and (3) some skill in applying those

methods. Critical thinking calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends. (p. 5-6)

Whereas, Dewey (1910) defined reflective thinking as an “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends” (p. 6). Dewey (1910) contended that students must have a base knowledge before using reflective thinking. For instance, if students do not have a base knowledge of what is occurring, the solutions or conclusions may be inappropriate or incorrect. Of course, these are not the only two definitions in the literature.

Glaser, co-author of the Watson-Glaser Critical Thinking Appraisal, is frequently cited (Brunt, 2005; Fisher, 2001; Kennedy, Fisher, & Ennis, 1991; Pascarella, 1999) for critical thinking; while Dewey is a frequently cited resource for reflective thinking. It is astonishing how Dewey’s definition of reflective thinking has also been used as the definition of critical thinking. Fisher (2001) states, “John Dewey, American philosopher, psychologist, and educator, is widely regarded as the ‘father’ of the modern critical thinking tradition. He called it ‘reflective thinking’” (p. 3). This is not an argument about what is the correct or best definition, but identifying what reflective thinking is.

Dewey (1933) saw reflective thinking as an experience. Whether the experience is positive or negative, learning occurs. He stated, “What an individual has learned in the way of knowledge and skill in one situation becomes an instrument of understanding and dealing effectively with situations which follow. The process goes on as long as life and

learning continue” (Dewey, 1938, p. 44). He described a child who learned to manipulate his parents. Manipulation became a skill this child used not only with his parents, but also with others. This child knew exactly what to do to get what he wanted. This is not a desired behavior, but it is an example of learning through experience and with each experience being able to improve on the skill.

Dewey (1938) pointed out that if students do not think about what they are studying, reading, and/or experiencing, the information is not useful. Just as the child who learned to manipulate, students need to think while doing. However, before engaging in reflective thinking, Dewey (1933) explained it is necessary to develop three characteristics: open-mindedness, whole-heartedness, and responsibility. He mentioned that in every situation there are many perspectives. Open-mindedness is addressed by individuals’ compliance to see others’ perspectives (Brookfield, 1995; Dewey, 1933; Plack & Greenberg, 2005; Mezirow, 2000; Schon, 1987; Tanner, 2006). Whole-heartedness is the enthusiasm, desire, curiosity, and energy individuals put forward (Dewey, 1933). Lastly, responsibility is taking ownership, which in this case Dewey (1933) acknowledged is the willingness to accept the consequences of an action and/or behavior which ties open-mindedness and whole-heartedness together. For example, during an eight-week period, I provided clinical instruction for eight students. These students demonstrated these characteristics in the hands-on care provided to the children and families for whom they cared. After each clinical day, the students shared their actions and skills provided during that day. During this time, students were allowed to question and/or praise another student’s action. The students verbalized how much this

sharing of information meant to their learning. They believed that even if a student made a poor judgment in a given situation, everyone learned from it. With these characteristics or attitudes, individuals are ready to practice reflective thinking (Dewey, 1933).

Another view of reflective thinking is shared by Schon (1987). Schon defined a “reflective practicum” as “a practicum aimed at helping students acquire the kinds of artistry essential to competence in the indeterminate zones of practice” (1987, p. 18). Reviewing this definition, a practicum is provided to help students achieve competence in situations which are unfamiliar or situations that they would not encounter during their time in school. Schon (1987) described how this practicum is applied to schools of architecture, music, and psychotherapy since much of the learning is accomplished as hands-on learning or learning by doing.

Schon (1987) identified reflection-in-action and reflection-on-action as ways to develop professional knowledge. Reflection-in-action occurs at the present time. Individuals think about what they know and what they are doing and decide which step is the best. In other words, reflection-in-action is the same as the phrase frequently heard in nursing as “thinking on your feet”. Reflection-on-action occurs at a later time, such as when driving home after work, reviewing what occurred and what actions were taken, and asking oneself “Would I do it the same way next time or would I want to do it differently?” Another question to ask is “If I would do it differently, what would I do?” Questions such as these demonstrate Schon’s reflection-on-action. Both of these types of reflective thinking provide individuals with the opportunity to expand their knowledge,

perspectives, and contemplate changes (Jasper, 2003; Johns, 2003; King & Kitchener, 2004; Mezirow, 1990).

Mezirow (1990) provided insight on reflection as well in transformative learning. He explained reflection as exploring a situation or problem in order to get a better understanding. He justified it as the change in one's perspective that transforms the way an individual learns, responds, and interacts. With Mezirow's meaning, one could ascertain that a situation or problem of uncertainty provides a challenge, but also an opportunity to obtain a new perspective, understanding, and transformation. For example, a nurse who is accustomed to doing certain procedures for specific conditions may need to realize there are ever-changing strategies occurring in health care and adapt to new ways of going about completing a procedure. Being able to see others' perspectives, accept cultural differences, and adapt to the changes even though they may be uncomfortable and unsettling, allows learning to occur (Dewey, 1933; Johns, 2003; Mezirow; Schon, 1987).

Subsequently, reflective thinking, to King and Kitchener (1994), is described as the development of solutions by individuals who have knowledge and reasoning skills but also realize the importance of uncertainty. King and Kitchener created the Reflective Judgment Model, which "describes a developmental progression in people's assumptions about how and what they can know" (p. 20). This model provided seven stages of reflection arranged in three levels. The three levels are prereflective thinking, quasi-reflective thinking, and reflective thinking. The stages and levels are summarized in Table 1.

The first level, prereflective thinking is comprised of three stages. Stage one describes knowledge that is obtained through observation which means if I see it, it must be true. Stage two explains that knowledge obtained through individuals with expertise on the information provided is the truth and best information. Stage three describes knowledge obtained through personal beliefs until other individuals can be convincing that other information is true. In this prereflective level of thinking, King and Kitchener (1994) believed that individuals assume only one answer can be correct, and the individual in charge of providing the information has all the correct answers. In the second level of thinking, quasi-reflective, there are two stages. Stage four describes that knowledge is obtained through evidence and reasoning. For instance, individuals begin to realize there is no possible way to know all the answers. In stage five, knowledge is subjective and an individual's perspective has much influence on it. These two stages, which comprise the second level of thinking, explain that individuals are recognizing that not knowing all the answers or being unsure is a part of constructing knowledge.

The third and last level of thinking is reflection. This level consists of two stages. In stage six the knowledge is constructed through personal beliefs and perceptions and also by considering others' beliefs and views. For instance, individuals tend to compare knowledge and evaluate the information using several sources. The last stage, stage seven, describes knowledge as the outcome of the process which involves reasoning, personal beliefs and perceptions, other individuals' points of view, evidence from several resources, questioning, and discussion. Once individuals reach this stage, they know how to reflectively think about problems or situations thoroughly to attain a solution which is

the best because of the many resources used. In this level, King and Kitchener (1994) stated that, "Reflective thinkers consistently and comfortably use evidence and reason in support of their judgments" (p. 9). In this level, comparisons of information and evidence are used to develop the most reasonable solution for which the reflective thinker can support (Table 1).

King and Kitchener's Reflective Judgment Model (1994) has many similarities to Benner's Novice to Expert Model in nursing (1984). Benner's Novice to Expert Model reflect the progression of nurses from thinking in concrete terms to abstract terms and from needing step-by-step instructions to seeing the whole individual and knowing how he/she will respond, what interventions need to be completed, and what to expect the patient to do. Benner's model begins with the novice nurse who has limited clinical nursing experience and thinks in a concrete manner. This stage resembles the first level of Prereflective thinking in King and Kitchener's model.

The next stage Benner (1984) describes is the advanced beginner. At this stage, the nurse will have had more clinical nursing experience, but he/she continues to need detailed, step-by-step instructions. This individual does the exact steps provided and nothing more. Again, this stage is similar to the Prereflective level because the advanced beginner nurse sees the instructions from the mentor or preceptor as the authority figure.

Benner's (1984) next stage is competent. In this stage, the competent nurse is aware of his/her own actions, has a plan of care for the patient, but it takes the nurse much time to complete the interventions in the plan of care. Another aspect in this stage to consider is that the competent nurse does not like changes in the plan or interventions.

This stage in Benner's model is comparable to King and Kitchener's (1994) second level which is Quasi-reflective thinking especially stages four and five which the individual recognizes knowledge to be obtained through reasoning, evidence, and is subjective.

The fourth stage in Benner's (1984) model is Proficient which explains that the nurse is able to see the whole patient. This individual can identify the situation, interventions, goals, and evaluate if the care was effective. This individual is able to adapt to a change in the plan of care to obtain a positive outcome for the patient. This stage is similar to King and Kitchener's (1994) third level, Reflective thinking stage six since at this stage the individual takes others' perspectives and experiences into account.

The final stage of Benner's (1984) model is Expert. In this stage, the individual has an abundance of experience, reflects on past knowledge and experience to make decisions, not longer needs step-by-step instructions, and sees each patient in a unique manner and is able to provide individualistic care. This stage is similar to King and Kitchener's (1994) level three, stage seven. This is the stage in which the individual reflectively thinks about the situation and makes decisions because of prior experiences, knowledge, and/or resources.

Table 1

Summary of Reflective Judgment Model

Thinking Levels	Stages	Stage Description
Prereflective Thinking	One	Describes knowledge obtained through observing.
	Two	Explains knowledge that is obtained from authorities in the field.
	Three	Describes knowledge from personal beliefs.
Quasi-reflective Thinking	Four	Describes knowledge obtained through evidence and reasoning.
	Five	Explains knowledge to be subjective.
Reflective Thinking	Six	Considers others' beliefs and compares different sources of information.
	Seven	Describes the process, which reveals individuals' ability to reflectively think.

Note. Adapted from *Developing Reflective Judgment: Understanding and Promoting Intellectual Growth and Critical Thinking in Adolescents and Adults*. Copyright 1994 by Jossey-Bass Publishers.

While some theorists provide a definition of reflective thinking, Johns (2005) provided a description of reflective thinking. With so many definitions for reflective thinking, the description Johns (2005) provided is an identification of what is involved. He stated that, "Reflection is being mindful of self" (p. 2). His concept of reflective thinking espoused that of other theorists. As such, Johns believed reflective thinking definitely focuses on experiences, beliefs, values, but also on self-awareness and self-assessment. Reflective thinking allows individuals to build on past experiences, past and current knowledge, to see other possibilities, to gain more knowledge about self, and to improve practice (Johns, 2003).

After a review of definitions and Johns' (2005) description of reflective thinking, for purposes of the current study, the reflective thinking process will be referred to as the active, progressive, developmental process of building on prior knowledge, experiences, skills, and beliefs while observing, listening, discussing, and challenging the information in order to address aspects required for competence in professional education. Reflective thinking "educates your emotions and impels you to action, helps make you a better person and not just a better nurse" (Speedy, Daly, & Jackson, 2006, p. 105).

Adult learning and reflective thinking require individuals to think about past knowledge, experiences, discussions, and perceptions while consistently questioning and reasoning to obtain the best outcome. As mentioned earlier, learning is not always an easy task. It is arguable that adults do not begin as self-directed learners, but that they learn how to be self-directed (Knowles, 1973; Merriam, 2001). This is also the case for reflective thinking. Individuals do not begin at stage seven of the Reflective Judgment

Model (1994) or the Expert stage in Benner's (1984) model for nursing. Individuals learn and develop this thinking over time (Benner, 1984, 2010; King & Kitchener, 1994, 2004).

Just as adult learning has several components so does reflective thinking. Components which are frequently mentioned with reflective thinking include: metacognition, problem solving, problem posing, self-awareness, and the learning environment. Each component plays a significant role in developing and using reflective thinking. As an educator, thinking about a typical day involves reviewing and including each of these components.

Metacognition

Metacognition is referred to as thinking about thinking (Paul, 1990; Fisher, 2001). An example of this would be when students read a chapter in a textbook, and they stop to ask themselves questions in order to understand the information. If the students do not have a clear understanding of the information and cannot restate the information in their own words, they need to evaluate their next step. This could involve asking more questions, discussing it with colleagues, or re-reading the text.

Metacognition is defined by Mezirow (1990) as a "process of knowing about cognitive states and their operations" (p. 8); while Bain (2005) recognized metacognition as being able to think about one's own thinking. This statement referred to teachers thinking about their thinking and understanding the information that they teach. In order to learn, individuals need to think (Dewey, 1933). Metacognition has also been described as "turning transparent processes into opaque activities" (Siegel, 2007, p. 171). This

quote provides an image which goes from clear to blurry. One may question how this blurriness enables individuals to learn. If information is unclear or blurry, the usual response individuals take is to ask questions in order to clarify or make the situation clearer. For this to occur, individuals are required to think about or focus on their thoughts, beliefs, or knowledge. Kuiper and Pesut (2004) acknowledged the relevance of metacognitive skills of talking to oneself or thinking out loud. Talking to oneself or thinking out loud has been shown to promote questioning which leads to dialogue, discussion, and sharing (Forneris & McAlpine, 2006; Tanner, 2006). This in turn allows not only one individual to learn, but many. Even though the information shared may be from a situation in which an error occurred, useful results are learned. Students who participated in these metacognitive skills performed at higher levels (Kuiper & Pesut, 2004).

Problem Solving and Problem Posing

Problem solving and problem posing are two different components, however, they will be addressed simultaneously to provide a better understanding of the importance they pose in reflective thinking. Dewey (1910) believed that individuals engage in reflection when they encounter problems with uncertain answers. When no one answer is correct and when a solution is not found by strictly using facts, reflective thinking is essential. Students need to be reminded that some problems or situations may not be solved with one correct answer. King and Kitchener (1994), in their Reflective Judgment Model, believed learners begin in level one where the learner is thinking in *simple* terms to attain solutions. King and Kitchener (1994) determined this level as one attained early in life.

As explained earlier in this chapter, this model progresses through three levels with seven stages. At level three, learners are actively involved, open-minded, flexible, and always thinking about improvement.

Just as Benner's Novice to Expert Model is comparable to King and Kitchener's Reflective Judgment Model, Tanner (2006) developed a similar model called the Clinical Judgment Model for nursing. This model identifies a reflective thinking process as "enhancing" students' learning experiences (p. 208). Used in the clinical setting, it identifies four steps which are noticing, interpreting, responding, and reflecting. Noticing includes the nurse's expectations, changes in a situation, and/or the environment in which nurses work. This means nurses in comfortable and safe learning environments are likely to know what to expect in certain situations and can adapt and make the necessary changes because they feel supported. Interpreting and responding are the next steps which involve reasoning and taking action. During these steps, nurses pose questions to develop the solutions or actions to take. Lastly, reflecting is connected to reflection-in-action and reflection-on-action which is reflecting at the present time and reflecting after a situation has occurred respectively. This last step promotes learning because thinking about what is being done and what has been done is taking place. With this model, students use reasoning and problem solving skills. Tanner (2006) concluded that educators need to provide the guidance and coaching of reflective thinking to promote it as a learning strategy.

One factor to keep in mind is the variety of solutions and answers some situations may include. For example, teaching students how to care for a child with a chronic

illness includes such information as knowing how the child eats, breathes, sleeps, and performs any other daily activities. However, since each child is unique and different in many ways, the concept to teach is that there are a variety of ways to care for children with chronic illnesses. It depends on the illness and condition of the child. In response to this, problem posing (Teekman, 2000) should be considered. In this same situation, the importance of questioning and anticipating or asking what could result is encouraged, and this is referred to as problem posing (Teekman, 2000). Knowledge, information, and solutions gained from a situation are likely to be used in other situations when they arise (Teekman, 2000). Problem solving and problem posing leads individuals to think about what it is they wish to achieve, the results needed in situations, and how and when to respond in the future (Tanner, 2006; Teekman, 2000).

Self-awareness

Reflective thinking can be viewed as a journey of discovering self through growth and development. In other words, individuals who reflect on a consistent basis discover more about themselves and gain insights to situations which provide additional growth and development in their lives on a personal and/or professional level. Brookfield (1999; 2005) identified that becoming self aware is an accomplishment of reflective thinking. For instance, identifying the learning style one prefers, realizing when mistakes are made and deciding on a correction, and recognizing others' perspectives to help in problem solving are situations in which individuals can become aware of themselves.

Plack and Greenberg (2005) identified self-awareness or critique as a necessary component to professional development. They mentioned the importance of having the

knowledge and skill in the medical field, but also the knowing of oneself. Determining beliefs, values, and perspectives, while also reviewing strengths and areas of improvement are areas of information obtained through reflective thinking (Plack & Greenberg, 2005). For example, I realize after reflecting that I identify something new about myself. It may be the thoughts I felt during the situation or the actions I took. Frequently, I ask myself “Did I accomplish the response I wanted in this situation or what else could I have done?” Again, this is an example of Schon’s (1987) reflection-on-action, which, as Thompson and Thompson (2008) found, nurses who frequently use it as well as reflection-on-action have increased self-awareness, accountability, and make a positive difference in the clients’ lives.

According to Boud (1995), students who are encouraged to reflect on their learning and take responsibility for their performance improve their professional preparation and lifelong learning. Cheung (2009) discovered using a self-assessment form encourages students to reflect on themselves, recognize their strengths and improvements needed, and identify the gap in their knowledge as to what they know and what they do not know.

Self-awareness is improved through narratives (Cangelosi, 2008; Merriam, 2001). While using narratives to encourage reflective thinking, Cangelosi (2008) found that providing students opportunities to improve their self-confidence enhances their performance in real nursing situations and improves client safety. Torsvik and Hedlund (2008) studied the use of reflective dialogue. One of the concepts discovered was that students develop more self-confidence through a reflective process. Narratives are a

familiar and comfortable method of learning (Merriam, 2001) because many individuals can tell stories about their lives. What one individual experiences in his life may be a learning opportunity for another.

Johns (2005) classified reflection as a “path of self-awareness to become more self-conscious in terms of the actions we take towards realizing our values or vision” (p. 8). Morgan and Johns (2005) explained how individuals begin to understand themselves through reflective thinking strategies such as dialogue, sharing with colleagues, and feedback. For instance, Morgan and Johns (2005) believed listening, being open-minded, and experiences as necessary in the participants for dialogue to take place. They described listening as a “mindful act” (2005, p. 116). What this means is that the participants are listening in order to make connections or identify gaps or clarify information (Morgan & Johns, 2005). Being open-minded allows individuals to see others’ perspectives or change their own beliefs and assumptions. Experiences provide situations from which to identify errors, changes that are necessary, new methods of doing things, and strengths and steps which work well. During dialogue, much sharing is occurring. Morgan and Johns believed the sharing of information contributes to the “awareness of self within the unfolding moment” (2005, p. 117).

At times, sharing information with colleagues can be challenging because it may hurt others involved. For instance, asking student nurses to reflect on what occurred during their clinical day on a hospital floor may initiate some comments such as mentioning that a nurse on the floor did not use sterile technique to change a central line dressing. However, these experiences provide great learning situations which permit

individuals to become more self aware. Providing feedback in a consistent manner guides and directs students to make adjustments and changes as needed. Tanner (2006) believed

If we, as nurse educators, help our students understand and develop as moral agents, advance their clinical knowledge through expert guidance and coaching, and become habitual in reflection-on-practice, they will have learned to think like a nurse. (p. 210)

Thinking about or concentrating on what is being read or discussed, understanding how to anticipate what may occur, contemplating the steps to take when an unexpected occurrence happens, and realizing self-confidence and self-awareness development are all components of reflective thinking. Not only are these important for reflective thinking, but an environment in which students are comfortable, safe, and respected needs to be provided (Bain, 2004).

Learning Environment

In today's ever changing health care systems, students need to learn technology, different forms of communication, and holistic, competent client care. Learning can occur anywhere, but what if students feel intimidated, anxious, or insecure? The importance of a conducive learning environment is required for student learning to occur (Dewey, 1933; Knowles, 1970). Several factors contribute to a conducive learning environment. These factors include: (a) physical comfort (Knowles, 1970; O'Connor, 2001), (b) trust (Bain, 2004; Knowles, 1970; O'Connor, 2001), (c) respect (Bain, 2004; Knowles, 1970; O'Connor, 2001), (d) helpfulness (O'Connor, 2001), (e) acceptance of

differences (Colin & Preciphs, 1991; Knowles, 1970; O'Connor, 2001), (f) encouragement (Bain, 2004; Bevis & Watson, 2000; O'Connor, 2001), (g) support (Knowles, 1970; O'Connor, 2001), (h) positive feedback (O'Connor, 2001), (i) care and nurture (Bevis & Watson, 2000), (j) receptive (Bevis & Watson, 2000; Brookfield, 2005), (k) flexible (Brookfield, 2005), and (l) personalization (Fraser, 2007).

Several factors on which I will expound for this study are physical comfort, acceptance of differences, positive feedback, and personalization. Physical comfort refers to the chairs, desks, seating arrangement, lighting, and temperature of the environment in which students learn. Knowles (1970) and O'Connor (2001) mentioned the importance that these items are addressed by teachers to ensure students comfort as well as providing an environment that is non-threatening. A non-threatening environment is one that allows students to share their feelings, beliefs, and assumptions without penalty. Trust, respect, and patience create a non-threatening environment (Boud, 1995). Whereas, the acceptance of differences is important for students to realize they will not be judged on their beliefs, actions, or color of skin. Colins and Preciphs (1991) believe it is necessary for the teacher to acknowledge and address racism if it occurs. Not only is it necessary for the teacher to evaluate any perception he/she may have of another culture, but also to realize and address the verbal and nonverbal interactions he/she may portray (Colins & Preciphs, 1991). Accepting differences in others revolves around the environment of creating a trustworthy and honest relationship. This allows students to share their experiences, their actions and/or behaviors in regard to

the experience even if it is painful and/or controversial, and encourages them to state their viewpoints (Colin & Preciphs, 1991; O'Connor, 2001).

As students proceed in their education, teachers are in a position to provide feedback. This feedback is not only positive on what they are doing well, but also feedback which acknowledges the areas that need improvement. O'Connor (2001) believes it is important to begin by telling the students what they did well, followed by what needs improvement. Going about in this manner allows the students to realize they are not a failure.

Oermann and Gaberson (2010) believed feedback should be precise and timely. The feedback should identify the exact problems the students are having and should occur at the time of the problem or immediately after. Going about giving feedback in this manner, students are able to remember exactly what they did and can ask appropriate questions of the teacher as needed (Oermann & Gaberson, 2010). If students develop deep learning, understanding and long-term retention are likely to occur (Havard, Du, & Olinzock, 2005). A key component to students acquiring deep learning is to provide immediate feedback (Rushton, 2005). Providing feedback during the reflective thinking process may tell students if an answer is incorrect or correct or needs more thinking. Feedback allows students to discuss among peers and instructor other options which may answer the question correctly. Laird, Shoup, Kuh, and Schwarz (2008) found deep learning approaches, such as reflective thinking, have a positive influence on students' personal and academic development.

Lastly, teachers who consider the students' feelings and well-being, and get to know each student addresses the personalization (Fraser, 2007) necessary in a conducive learning environment. Personalization should begin in the hallway, cafeteria, or any place students and teachers may encounter each other (Zorn, 2010). Teachers who send students positive non-verbal expressions or greet them in the hallway and/or cafeteria, are described by students as approachable and friendly (Zorn, 2010). Learning the names of each student in the class and providing written comments to students which are specific to them and not just the same comment everyone receives motivates students to do their best (Fraser, 2007; Oermann & Gaberson, 2010; Zorn, 2010).

Robinson and Kakela (2006) sought feedback from students regarding the learning environment. They found students wanted an environment where trust, personalization, interaction, and experiences are valued. A student-centered environment consists of a trusting relationship between the student and teacher which allows students to take risks without fear of being ridiculed or insulted by peers or the teacher (Zygmunt & Schaefer, 2005). Schiller (2009) explained a student-centered environment is one in which students take responsibility and work together with the instructor to identify rules.

Dewey (as cited by Hansen, 2002) encourages open-mindedness, respect, encouragement, listening to others' perspectives, collaborating with others, and seeing the whole picture. The teacher is the "dynamic element of the environment" (Hansen, p. 274), and the behavior of the teacher is a factor that influences the environment more than any other factor (Bain, 2004; Entwistle, 2009; Knowles, 1970; Zorn, 2010). For instance, if the teacher is open-minded, respectful, encouraging, supportive,

approachable, and knows students by name, students feel safe to express themselves, ask questions, and participate in learning (Bain, 2004; Entwistle, 2009; Zorn, 2010). Bain (2004) adds that teachers who encourage questions, provide guidance for students, challenge students, and promote a trusting relationship produce a learning environment students highly recommend. However, if the teacher is rude, accusatory, discouraging, or not listening to students, the learning may be hampered because students are afraid to ask questions or maybe even to say anything at all.

The learning environment is important to all ages of students. The relationship that forms between the teacher and student and the display of authenticity and genuineness in the subject being taught are important factors (Entwistle, 2009). In the next section of this chapter, recommended strategies are discussed with a concentration on nursing and nursing education.

Recommended Strategies

With adult learners, teachers often wonder how to go about teaching so it is beneficial to the learners' success. Teachers are encouraged to use strategies, such as questioning (Barrington & Campbell, 2008; Benner, Sutphen, Leonard, & Day, 2010; Forneris & McAlpine, 2007; Joseph, 2005; Kuiper & Pesut, 2004; Plack & Greenberg, 2005; Rogal & Snider, 2008; Thompson & Thompson, 2008;), dialogue (Barrington & Campbell, 2008; Benner et al. (2010); Joseph, 2005; Kuiper & Pesut, 2004; Schreiner, Pimple, & Wolf Bordonaro, 2009), and thinking out loud (Barrington & Campbell, 2008; Forneris & McAlpine, 2007; Joseph, 2005; Kuiper & Pesut, 2004) which provide the learners an opportunity to think about past experiences and knowledge to apply to new

situations as they arise. These strategies are not an all-inclusive list, but are the strategies addressed for this study.

The use of questioning is not a new teaching strategy, but it is believed to be consistent with student learning. Benner et al. (2010) acknowledged questioning and dialogue as two teaching strategies that nursing students value in their instructors. Students see these methods as engaging, guiding, and thought-provoking (Benner et al., 2010). Encouraging questions such as “what if”, “so what”, “why”, and “how” allow students to think about a situation, anticipate what they may do or not do, and grasp connections between theory and real life situations (Barrington & Campbell, 2008; Benner et al. 2010; Forneris & McAlpine, 2007; Joseph, 2005; Kuiper & Pesut, 2004; Plack & Greenberg, 2005; Rogal & Snider, 2008; Thompson & Thompson, 2008).

Dialogue provides students the opportunity to interact with colleagues, exchange thoughts and ideas, and express the information in language they understand (Barrington & Campbell, 2008; Benner et al., 2010). Entwistle (2009) believed dialogue encourages students to think aloud. In turn, as students think aloud, teachers are able to identify if students are making the connections needed. If teachers model how questioning, dialogue, and thinking aloud provide learning strategies, students can practice on their own with the teacher as the guide (Joseph, 2005).

The above authors have acknowledged that the use of these strategies encourages students to think on a higher level than memorizing and/or recalling information. With these strategies, students promote their understanding of the information so they can apply and synthesize it to a real life situation (Barrington & Campbell, 2008; Benner et

al., 2010). These strategies have been acknowledged by the above authors as a method of active and self-directed learning. According to Chickering and Gamson (1987), students who take an active part in learning, such as participate in discussions, activities, and group projects, learn more than the students who sit back and listen. In active learning, students take responsibility to learn and view the teacher as the guide and/or facilitator (Braxton, Jones, Hirschy, & Hartley, 2008). Self-directed learning involves individuals who are autonomous and learn for personal growth (Brookfield, 1999; Merriam & Caffarella, 1999). Both active learning and self-directed learning require the learners to be independent and take responsibility for their own learning (Braxton et al., 2008; Merriam, 2001), whereas, self-directed learning strives for the goal of transformational learning (Merriam, 2001).

Dewey (1933) and Brookfield (2005) liked questioning as a way to promote reflective thinking. They proposed that individuals ask questions to construct knowledge and solutions, and to make sense of information. According to Brookfield, questioning can change the pace or direction of discussion, if needed, and can keep students engaged and alert. For Dewey, the use of questioning provided a way to go beyond the seeing is believing stage and enhance the overall learning for individuals. Just as Dewey (1933) related the importance of questioning to reflective thinking, so did Wilson and Wing Jan (1993). They believe “questioning is integral to developing reflective and metacognitive thinking” (p. 66). By questioning, individuals achieve clarification of unclear information, identify gaps in their knowledge, and spark increased curiosity (Dewey, 1933; Wilson & Wing Jan, 1993). Supporting students to ask “why” will assist them in

understanding the situations, problems, or information (Thompson & Thompson, 2008). This strategy allows students to identify what they do not know and can assist them in decision-making and problem solving.

Schon (1987) categorized the above listed strategies under the phrases of thinking-in-action and thinking-on-action. Thinking-in-action is a process in which individuals are aware of their actions as they are doing tasks. Thinking-on-action is a process in which individuals review and critique their practices and/or decisions. As mentioned earlier, reflection-in-action and reflection-on-action were useful for architectural, music, and psychology students. These reflective thinking strategies encourage students to question actions, dialogue with colleagues, and share information, ideas, and/or solutions. Schon has been frequently cited in nursing literature for these strategies which have been useful to improve client care (Benner, Sutphen, Leonard, & Day, 2010; Forneris & McAlpine, 2009; Plack & Greenberg, 2005).

Reflective thinking is addressed by yet another author, Magolda (2001). She explained that the use of dialogue helps in developing reflective thinking. The ability to learn from colleagues by talking about what occurred or what may occur and to see multiple perspectives enhances learning (Magolda, 2001). Moon (2004) found that inviting students to think about the past learning experiences they had and asking themselves what technique or strategy worked best for them and allowing them to dialogue with their colleagues provides additional information, ideas, and strategies. Magolda (2001) and Moon (2004) suggested that this dialogue and collaboration with colleagues is a way to deepen reflective thinking skills and enhance knowledge.

Brookfield (2005) identified discussions as critical interactions for individuals to collaborate, debate, and affiliate with one another. He believed that discussion is a means for students to think about past experiences, share with colleagues, identify their own perspectives, improve knowledge, and link pieces together to see the whole picture. Brookfield mentioned that “discussion can promote understanding, explain differences, and make human interactions more productive and enjoyable” (p. 35) which can prompt transformation.

Moon (2004) suggested another method of reflective thinking which she called “standing back from oneself” (p. 144). This activity may include asking the students to take a broader look at what they are doing, the actions they are taking, and why. It may also include asking students to think back to what occurred and tell it in the “third person” (p. 144). Thompson and Thompson (2008) described a similar technique of having students put themselves in the shoes of other individuals and ask “If I were...” (p. 85). This may be referred to as thinking out loud or think aloud (Davey, 1983; Forneris & McAlpine, 2007; Joseph, 2005). Thinking out loud allows students to verbalize what is going through their heads at the time, sharing prior knowledge and experiences, and clarifying confusing information (Davey, 1983).

Questioning, dialogue, and thinking out loud are a few of the strategies used to encourage students to develop a deeper understanding of information. By using these strategies, educators can identify if students are able to make connections, think about actions which may be taken in certain situations, and provide immediate feedback from which the students learn the best response or action to take.

Strategies Used in Nursing

The review of the nursing literature shows the use of reflective thinking in hospital settings through workshops, preceptorships, train-the-trainer inservices, and orientation programs. Teekman (2000) identified reflective thinking as a method to develop understanding and connect theory to practice by putting the facts and concepts together. Questioning, sharing experiences with colleagues, and talking with oneself are strategies used with nurses. Teekman (2000) found that reflective thinking does not happen automatically, but requires active participation and support for the learner. He believed that the ability to use reflective thinking “signifies the move towards an expert practitioner” (p. 1134).

Forneris and McAlpine (2009) recognized the significance of preceptors using reflective thinking as a model for teaching novice nurses to link theory to practice. Reflective thinking has many innovative uses for educational purposes. Several articles describe the use of reflective thinking in training novice nurses (Forneris & McAlpine, 2009), preparing students for the realities of the workplace (Candela & Bowles, 2008), building competency (Ireland, 2008), and facilitating transformation of self and learning (Magolda & King, 2008). Forneris and McAlpine (2007, 2008, 2009) found that using a reflective thinking process is beneficial in the hospital setting to provide relevance and meaning to situations. From novice nurses to preceptors, reflective thinking has broadened their perspectives, allowed questioning of information they did not understand, and improved ethical reasoning (Forneris & McAlpine, 2009). Reflective thinking plays a factor in evidence-based practice by improving and changing standards, protocols, and

procedures. This is seen as nurses think about what they have done, what they are currently doing, and sharing this information with colleagues from other areas in nursing or other areas of the country. For instance, nurses who dialogue about situations which occur throughout the country will realize the different procedures and steps being done and can adapt them as needed to improve client care.

The strategies used to promote reflective thinking for nurses include the previous listed strategies, such as questioning, dialogue, and thinking out loud. However, other strategies have also been found to provide significant contributions to reflective thinking for nurses. Platzer, Blake, and Ashford (2000) identify the use of small groups, discussion, and Socratic questioning as useful strategies in the development of reflective thinking in nurses. For instance, after a specific client situation, if nurses discussed the occurrences and posed questions such as “What if.....?” other actions were identified as possible solutions.

Plack and Greenberg (2005) have identified techniques to use with medical students. They include: questioning, dialogue, and after-action reviews. These strategies provide the students time to think and share with colleagues. The after-action reviews are similar to debriefings (Lasater, 2007). This strategy allows individuals to discuss and reflect on an experience immediately after it occurs. Lasater acknowledges the facilitator as a critical component of debriefing. The facilitator guides the individuals through the experience and ensures realistic information is shared.

Questioning, dialogue, and thinking out loud in addition to small group discussions and after-action reviews, or debriefings, are strategies used in nursing. These

strategies have contributed to policy changes, becoming a preceptor, and improved nursing care (Benner et al., 2010; Forneris & McAlpine, 2009; Institute of Health, 2011).

Strategies Used in Nursing Education

Although reflective thinking has been used in nursing and higher education, there is limited research on the use of reflective thinking strategies in nursing education.

Carroll et al. (2002) made this statement referring to nursing students, “If students are to be required to be reflective, then the theoretical content, skills involved and processes to evaluate the development of these skills need greater consideration” (p. 40). However, before evaluating these skills, the question is “where are the students learning to be reflective?”

In nursing education, the use of a reflective thinking process called journaling has been frequently used as a method for students to learn the benefits of reflection (Benner, Sutphen, Leonard, & Day, 2010; Callister, Luthy, Thompson, & Memmott, 2009; Conceicao & Taylor, 2007; Kessler & Lund, 2004; Lasater, 2009; Plack & Greenberg, 2005; Schon, 1987). Benner et al. (2010) believed that nursing instructors use journals to provide students an opportunity to express their thoughts, feelings, and actions about the experiences encountered. Lasater (2009) found that having students write reflective journals, which required students to think about each situational experience in more depth after it occurred, permitted students to pinpoint gaps in their knowledge, know what they did well, and clarify any questions they had.

A study conducted by Glaze (2001) showed graduate nursing students, who consistently use reflective thinking in order to expand their practice, went through a

transformation which described them as being more aware of what nursing entails, realizing how they respond because of previous experiences, and recognizing themselves as more confident because of reflective thinking. These students went on to explain that with reflective thinking they felt more empowered to make decisions, thoughtful in the care they provided, and more self-confident overall.

Another strategy used with nursing students is “MUDD Mapping” (Barrington & Campbell, 2008). This strategy is interactive and engages students in dialogue which provides them a meaningful learning experience. According to Barrington and Campbell, MUDD is an acronym for “my understanding through dialogue and debate” (2008, p. 159). They believe this strategy allocates thinking out loud, sharing with colleagues, seeing others’ perspectives, and improved thinking. During the use of this strategy, students interact with each other, receive new ideas and information, and attain an understanding of the information presented.

Reflective journals and dialogue are strategies used with nursing students, with the most common being the journal. If reflective journals require students to think about situations in depth, could a reflective thinking intervention in which students share knowledge, experiences, and beliefs with colleagues, in the presence of a facilitator who provides immediate feedback, influence students preparation for exams which include higher level thinking questions, and students’ clinical reasoning skills? The literature reflected that reflective thinking is a strategy used with nurses to provide growth and development, improve competence and self-confidence, and increase reasoning. Therefore, according to Candela and Bowles (2008), nursing students need to be taught

concepts of self-awareness and reflection throughout the nursing curriculum to improve the quality of learning. Rogal and Snider (2008) stated, “reflective thinkers are well equipped to respond proactively to clinical occurrences in their practice” (p. 214). Drawing on information and past experiences improves the development of a nurse versus simply memorizing and recalling information (Rogal & Snider, 2008). Realizing the necessity of having nursing students practice reflective thinking enticed me to develop a reflective thinking intervention for nursing students in a Child and Family Nursing course which will focus on questioning, dialogue, and thinking out loud.

Chapter Summary

Adult learning involves many learning theories, but in this study, the two theories described were transformational and experiential learning theories. For both of the theories, past experiences, perspectives, and reflection are important components.

The importance of using reflective thinking with students to arrive at the appropriate interventions and decisions has been acknowledged in this chapter. Components of reflective thinking for this study recognized metacognition, problem solving and posing, self-awareness, and the learning environment. Each component plays an important role in the development and implementation of reflective thinking. The importance of reflective thinking in relation to nursing has been identified as a way to “move towards an expert practitioner” (Teekman, 2000, p. 1134). Since reflective thinking may advance the nurse from a novice to competent and then to an expert (Benner et al., 2010), it may also be useful in nursing education.

To employ reflective thinking with nursing students, Tanner (2006) claims educators need to guide and coach students how to use it as a learning strategy. However, Dewey (1933) claims factors needed before using reflective thinking includes a base knowledge, open-mindedness, whole-heartedness, and responsibility. As several authors addressed the progress students made with problem solving and decision making by writing reflective journals, reflective thinking may provide learning for students through discussion, questioning, and feedback.

The literature reviewed for this chapter was intended to provide a basic knowledge of adult learning, reflective thinking and the key components, and recommended strategies to develop and enhance reflective thinking. The details and suggestions related to reflective thinking enable individuals to see what has been and still needs to be learned. I proceed to the next chapter where the research design is presented. The research design is described along with the population and sample. The methods used for data collection are addressed as well as how the data was analyzed. To ensure the quality of the data, trustworthiness is noted. As identified in many studies, limitations are described.

CHAPTER THREE: METHODOLOGY

“Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand” (Confucius, c. 450 BC; as cited by Neill)

This chapter describes the study’s research methodology and includes discussions around the following areas: (a) research design, (b) rationale for the research approach, (c) description of the research population and sample, (d) instrumentation, (e) methods of the data collection, (f) data analysis, and (g) limitations of the study.

Nursing students enrolled in a Child and Family Nursing course quickly realized that previously used study strategies were no longer adequate to achieve and succeed in this course. The purpose of this study was to determine the influence of a reflective thinking intervention that utilizes reflective thinking activities for nursing students in a Child and Family Nursing course in a College of Nursing at a Midwest university. The primary research question was, “How does a reflective thinking intervention affect nursing students’ preparation for exams and achievement in a Child and Family Nursing course?” Secondary questions were: “How do reflective thinking activities impact the study habits of nursing students?” “What factors affect the learning environment during a reflective thinking intervention to make it conducive to learning?” “What changes, if any, do nursing students notice about themselves personally, professionally, and/or academically after participating in a reflective thinking intervention?” These questions were best answered with an action research approach and Grounded Theory analysis.

Research Design

The research design is the plan the researcher takes to describe how the study progresses (Berg, 2007). Creswell (2009) stated that the research design can take a qualitative, quantitative, or mixed methods approach. He mentioned the design includes not only the plan, but also the data collection methods, data analysis, and interpretation. The methodology used for this study was a qualitative action research design. The rationale for using a qualitative research design was, as described by Merriam (1998), to understand the participant's viewpoint and beliefs, provide much description in a holistic manner, and discover or identify a way to address a current problem.

Action research is not a new idea, but it is necessary to provide several definitions.

Action research is implying a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out. (Carr & Kemmis, 1986, p. 162)

Coghlan and Brannick (2010) defined action research as “research in action” (p. 5) which is a collaborative process involving participant engagement and feedback while actively attempting to find a solution to a problem that had previously been identified. Craig (2009) explained that action research is a method used to improve practices in classrooms by using an inquiry process which involves indentifying the problem, gathering data, analyzing the data, and developing an action plan (p. 3). Stringer (2007) described action research as a “systematic approach to investigation that enables people to find effective

solutions to problems they confront in their everyday lives” (p. 1). McNiff and Whitehead (2006) claimed action research is conducted to “improve learning in order to improve educational practices” and to “advance knowledge and theory” (p. 1). These authors do not specify a “type” of action research, but instead mentioned that action research is used in a variety of settings which include education, health care, social work, organizational development, and planning and architecture (Coghlan & Branick, 2010; Craig, 2009; Stringer, 2007). McNiff, Lomax, and Whitehead (2006) clarified action research as an “intervention in personal practice to encourage improvement for oneself and others” (p. 19). What can be gleaned from the many definitions in literature is that the researcher studies a situation or problem, gathers information and feedback from individuals involved, and aims to change or improve the quality of practice as the end result (Berg, 2004; Coghlan and Brannick, 2010; Craig, 2009; Creswell, 2005; Hendricks, 2006, 2009; Herr & Anderson, 2005; Hinchey, 2008; Lewin, 1946; McNiff et al., 2006; Mills, 2007; Schmuck, 2006, 2009; Stringer, 2004, 2007).

Action research began with Kurt Lewin (1946) when he identified four steps in the process which are planning, acting, observing, and reflecting which continue in a cyclical manner. The first step is planning. In this step the research question or questions are identified, the situation surrounding the issue is examined, and a plan is developed. During the next step, acting, the researcher implements the plan. With observing, the information is analyzed and interpreted in response to the plan. Potential solutions are reviewed in this step. The last step is reflecting. During this step, the results are reviewed and shared with others involved in the research study and further plans may be

made for future studies. This explains how action research is a cyclical process. Even though a solution may be found, there may be other issues which arise during the process. Once each step of the process has been encountered, the process then begins back at step one (Berg, 2004; Coghlan & Brannick, 2010; Herr & Anderson, 2005; Kemmis & McTaggart, 1988; McNiff, Lomax, & Whitehead, 2006; Mills, 2007).

In comparing the different approaches in action research, I found the number of steps in the study varied from three to seven. As mentioned earlier, Lewin (1946) describes a four-step process, whereas Coghlan and Brannick (2010), Hendricks (2006, 2009), Schmuck (2006), and Stringer (2004) suggested a three-step process. Each of these authors may use three different key words to describe the steps; each step consists of the same actions which include: reflection, action, and evaluation. These three steps occur in a cyclical manner. In the first step, reflection, the overall goal is to determine what needs improving (Coghlan & Brannick, 2010; Hendricks, 2006, 2009; Schmuck, 2006; Stringer, 2004). Asking questions such as “How can I get students to answer higher level thinking questions correctly?” is an example of a question to contemplate during this step. During the action step, the ideas, strategies, or techniques to solve a situation or problem are identified and attempted (Coghlan & Brannick, 2010; Hendricks, 2006; Schmuck, 2006; Stringer, 2004). The last step is evaluation (Coghlan & Brannick, 2010; Hendricks, 2006; Schmuck, 2006; Stringer, 2004). In this step, the information which is gathered through observations, interviews, journaling, or any other method of data collection is reviewed and evaluated for effectiveness. Overall, action research is

about action and research, about research in and on practice (Herr & Anderson, 2005; Kemmis & McTaggart, 1988; McNiff, Lomax, & Whitehead, 2006).

For the purposes of my study, I chose the three-step cyclical process (Coghlan & Brannick, 2010; Hendricks, 2006, 2009; Schmuck, 2006; Stringer, 2004, 2007) because the steps of reflect, act, and evaluate provide a constant process. Stringer (2007) explained that no matter if the three- or four-step process is used, reflecting, revising, repeating, and going from the reflection step to the evaluation step is possible. The three-step process provided the information I needed in order for me to understand and identify what was occurring and how to improve or solve the problem. With this three-step process, I studied my practice, assessed what has been working well, what needs improvement, how students are learning, and then took a problem or situation which needed improvement and developed a plan to resolve the problem. For this study, I reflected on students' preparation for exams, understanding and synthesis of the material provided, and achievement on exams.

By analysis of the verbal and written comments from students received during the course and evaluations received at the end of the Spring and Fall 2010 semesters, I worked to improve the teaching and learning occurring during the Child and Family Nursing course. Just as the definitions vary depending on the author, the types to action research also varies depending on the author. One type is educational action research method (Calhoun, 2009; Ferrance, 2000). With this type, the process utilizes feedback from participants from which decisions are made and tried in an attempt to address the problem and improve practice. Calhoun (2009) goes on to describe three approaches to

educational action research which are individual teacher research, collaborative action research and school-wide action research and are summarized in the following sentences. Individual teacher research is conducted in a single classroom in which the teacher is looking for a solution or solutions to a continuing problem. Students may or may not be involved in this research. Collaborative action research is explained as research which occurs in one classroom or several classrooms. However, there are at least two teachers involved in this process. It depends if the problem exists for the entire school district or just one school. The teachers work together to construct a plan for the research. According to Calhoun (2008), the data collected for this approach of action research is usually quantitative. Lastly, Calhoun (2008) mentions schoolwide action research. This approach of action research focuses on improving the entire organization by identifying a problem and collecting data from all schools or districts involved.

Coghlan and Brannick (2010) do not specify types of action research. For them, the term *action research* is

A generic one and is used to refer to a family of what might seem to be a bewildering array of activities and methods. At its core, action research is a research approach which focuses on simultaneous action and research in a collaborative manner. (p. 43)

Hendricks (2009) voiced her frustrations in reviewing action research definitions and types and arrived at the conclusion that action research is a process that empowers educators to increase their knowledge, improve their practice, and contribute to the academic arena. According to several action research studies conducted, the general

themes are reflecting, identifying a problem, listening to feedback, implementing changes throughout the process, and evaluating ideas that worked and those that did not in order to improve teacher practices (Coghlan, 2007; Hendricks, 2009; Herington & Weaven, 2008; Sowa, 2009). For this study, I conducted educational action research as described by Calhoun (2009) which is known as individual teacher research. However, when comparing it to the studies reviewed (Coghlan, 2007; Hendricks, 2009; Herington & Weaven, 2008; Sowa, 2009), it followed the same general theme as presented in these studies. This action research study will allow me to reflect on my teaching, utilize the feedback provided by students, and improve the teaching practices which enhance students' learning (Calhoun, 2009; Coghlan, 2007; Hendricks, 2009; Herington & Weaven, 2008; Sowa, 2009). For this study, students were used as sources of information to generate a solution to the problem.

During the semesters of data collection, I did not teach the Child and Family Nursing course. I conducted the R.A.V.E. Reviews. In the Child and Family Nursing course, nursing care for children and their families was addressed. Every body system, such as respiratory, cardiology, and gastrointestinal, were explained and conditions, clinical manifestations, treatments, interventions, outcomes, and discharge teaching were discussed in depth. Not only were these topics discussed, but also the involvement of the family and how nurses care for them, as well as, the child. During this course, five exams were given in addition to a comprehensive final exam. The preparation involved reading one to eight chapters and reviewing the posted power point classroom guides before the scheduled class.

In summary, the research design used for this study was a qualitative, action research study that emphasized research conducted by an individual teacher. This method seemed to best answer the research question of how a reflective thinking intervention influences nursing students' preparation for exams and achievement in the Child and Family Nursing course.

Population and Sample

The population is defined as the appropriate individuals to participate and provide information to answer the research question in the study (Berg, 2007); whereas, the sample is defined as smaller part of the population (Berg, 2007). For this study, the research question required a sample willing to participate in the five "Reflective Thinking Allows Variety for Excellence" (R.A.V.E.) Review sessions, document thinking in a journal, and reply to a questionnaire. A sub-sample did not only participate in these methods but were also interviewed. Since the purpose of the study was to explore the impact of a reflective thinking intervention that utilizes reflective thinking activities with nursing students in the Child and Family Nursing course, a purposive sample was used. According to Merriam (1998), a purposive sample is "based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (p. 61).

The criteria to be a participant in the interview process of the study included attendance at all five R.A.V.E. Review sessions and completion of the Child and Family Nursing course. However, all students enrolled in the Child and Family Nursing course during the Spring and Fall, 2010 semester were invited to complete a short on-line

questionnaire after completion of the course and grades were given. The students who attended at least one R.A.V.E. Review participated in journaling after the Review sessions and after the exam which followed that Review. A delimiting time frame of two semesters was used. Archival data from previous R.A.V.E. Review sessions were reviewed.

The research population involved 65 nursing students. These students had the option to participate in any, all, or none of the five R.A.V.E. Reviews. The students who attended any or all of the R.A.V.E. Reviews completed journals after the Review sessions and exams and were asked to complete an on-line questionnaire at the end of the semester. In addition to journaling and completing the questionnaire, interviews were performed with a sub-sample of 10 senior-level nursing students who completed the Child and Family Nursing course during the semesters in which this study was conducted. These students volunteered to be interviewed. This was the third semester for the accelerated students, and seventh semester for the traditional students. Seven nursing students were from the traditional Bachelor's Degree in the Science of Nursing (BSN) program, and three nursing students were from the accelerated BSN program. Generally, the students in the traditional BSN program are high school graduates entering college, while the students in the accelerated BSN program have worked several years in another area, are presumed at a higher maturity level, or usually have a previous degree in another area of study, such as psychology, education, or business. The differences between the two programs are the length and intensity of each program. The accelerated BSN program is conducted over an 18-month period and students do not have a semester

break, while the traditional BSN program is four years with breaks between semesters and in the summer. The students from each program were randomly selected as long as the criteria were met. All students who were interviewed passed the course which means they attained a grade of C or better.

The following table provides the age, ethnicity, and gender of the students who were interviewed, in addition to the BSN program in which they were enrolled.

Reflection and Action: Practical Procedures

For this study, a three-step process of reflection, action, and evaluation drawn from Hendricks (2006), Schmuck (2006), and Stringer (2004, 2007) was used. Even though the process was described as three steps, they were on-going, which means once the evaluation step was achieved, I returned to step one, reflection. This cyclical process was constantly done to improve practice. In the next paragraphs, a description of what occurred in each of the three steps over the semester is described. The process begins with reflection.

Reflection

Reflection was the first step of the data collection process in this action research study. The overall goal was to determine what needs improving (Hendricks, 2006; Schmuck, 2006; Stringer, 2004, 2007). The first step for me was to reflect on the verbal comments made by students during previous semesters in one-on-one meetings, before or after class discussions, or written comments on mid-semester evaluations or end of the semester evaluations. During this reflection, the difference of the Child and Family Nursing course and other nursing courses was identified. The differences which students

identified include: (a) no study guide is provided, (b) the material is like learning a foreign language, (c) test questions are thought provoking, (d) the teacher's expectations are high, and (e) the teacher does not teach to the exam or identify the material which will be on the exam. The difference mentioned regarding the material being "like learning a foreign language" is important to explain. Pediatric information, for many students, is completely new for them. This is a reason they mention it is "like learning a foreign language". They have not heard, read, or studied many of the terms, diseases, and conditions which occur in children. Therefore, not only do the students need to know how to think about this information and be able to provide reasoning and problem solving, they also need to learn more terminology, growth and development from birth to early twenties, and the differences in each age group.

After four years of teaching the Child and Family Nursing course, R.A.V.E. Reviews, a supplemental set of informal sessions to help students learn strategies for success, were developed. During the four years, I received evaluations and statements throughout the semester stating "this course is too hard", "the exam questions require me to think", and "I cannot answer the exam questions by studying the power point handouts". I tried using on-line worksheets and miscellaneous handouts covering the information from different perspectives, but these strategies did not seem to make a difference. I did much reading and one day discovered the manner in which I learn is through thinking back or reflecting on what I did right, what I need to improve, or what I will do next time. Questioning helps me to realize where my gaps are and where my focus should be.

Schon (1987) identified this thought process as reflection-on-practice and reflection-in-practice. I then realized this may be a great way to improve nursing students' thinking. I decided to develop a title which would draw attention. I came up with the title "Reflective Thinking Allows Variety for Excellence" (R.A.V.E.) Reviews. This is a reflective thinking intervention which is based upon reflective thinking and the use of reflective thinking activities. I thought the title would entice students to attend and participate in the Reviews and also instill a fun and inviting atmosphere. Studies by several educational theorists, such as Magolda (2004), Dewey (1910), King and Kitchener (1994), and Schon (1987), were used as the framework for the development. These theorists provide information on reflective thinking which I found exciting and relevant to learning and an important aspect in nursing which I used to develop a plan to address the problem.

Action

The second step in this action research study was action. During the action step, a suggestion, technique, or idea was identified and attempted (Hendricks, 2006; Schmuck, 2006; Stringer, 2004). My goal was to find a way to help nursing students improve their learning, answer exam questions, succeed, and prepare for real life situations so I developed R.A.V.E. Reviews. In order for the students to understand that the Review sessions have no affect on their grades, another faculty member taught the Child and Family Nursing course. I was invited to explain the Reviews to the students on the first day of class. I explained that the Reviews are held the week before scheduled exams; they are an optional two-hour event; and that the information obtained from the students

participating in the Reviews would be used for the completion of my Doctor of Philosophy Degree in Adult Education. I asked the students to vote for the two days and two-hour time periods which were most convenient for them. The Reviews occurred in a classroom which the students preferred on the campus of the aforementioned university. I scheduled the classroom at the beginning of the semester once the dates and times were determined. The dates, times, and locations for the R.A.V.E. Reviews were publicized on the University's Internet program for the course. It was easily accessible by students, instructor, and me.

The classroom environment for the Reviews was friendly, comfortable, informal, and fun. I told students they were allowed to bring lunch, snacks, or whatever they needed during that time. During the Reviews, I provided peppermints and/or other treats, such as individually packaged pretzels or fruit snacks.

For the Review set-up, I used several techniques. One technique was tables and chairs arranged in the traditional classroom style with the middle rectangle depicting the location where I stood or sat (Figure 1).

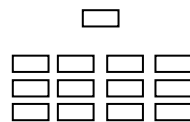


Figure 1. Traditional Classroom Style

Another arrangement used was a “U” style with the tables and chairs positioned like a “U” (Figure 2). Again, the rectangle sitting alone is where I stood or sat.

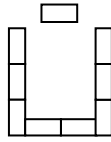


Figure 2. U Style

The last room arrangement used was a circle, square, or rectangle style (Figure 3). I sat or stood anywhere in the circle, square, or rectangle.

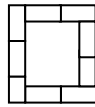


Figure 3. Circle, Square or Rectangle Style

For all Reviews, students were asked to come prepared, which included completing the “R.A.V.E. Admission Ticket”, and ready to discuss the topics which were on the upcoming exam. R.A.V.E. Admission Tickets were learning activities which I developed on topics to be addressed during the Review session. For example, an admission ticket for the Review session on respiratory and cardiology in pediatric clients was a plan of care for a child diagnosed with asthma. This activity template had some information included, but required students to fill in the missing information (see Appendix A). All students in this course had access to the “R.A.V.E. Admission Tickets” via Internet access through the program provided by this university. My idea behind having the students complete the “Admission Ticket” was that it forced them to

review notes and/or the textbook, to pinpoint what they understood and did not understand, and gave them a chance to form questions.

Students were instructed that the use of textbooks, class notes, power point slides/guides, or the Internet, during the review, was not allowed. They were encouraged to reflect and think about what they learned from reading, attending class, taking notes, clinical practice, and experience. I explained, on the first day of class and in the syllabus, the benefit of having, at minimum, a base knowledge of the topics, which the session would cover, was an important component to bring to each review session. I used a different reflective thinking activity, with the intent to assist the different learning styles, for each review session. I defined a reflective thinking activity as any activity which incorporates students to think and identify what they know; what actions were taken during the past experiences, such as, what went well, what could be improved, and “If I had the chance to start this day again, I would...”; other students’ perspectives; and on what information they need to improve.

For the Spring 2010 semester the following activities were used. The first R.A.V.E. Review focused on infectious and communicable diseases, the integumentary (skin) system, growth and development, and immunizations. I provided a 3x5 index card to all students attending the review. I then asked the students to fold the card in half. The students were then asked to write down, on one side of the card, all the immunizations they could think of that a child should receive by the time he is nine years old. They were then asked to turn the index card over, and on the top part, write down the first disease or condition that came to mind which had been discussed, read about in the

assigned chapters, or observed in the past two weeks during their clinical hours. On the lower part of the index card, they were asked to list three factors about the disease or condition noted on the top of the card. The factors could include signs and symptoms, treatments, nursing interventions, or teaching; but the factors could not come from only one category. For instance, if a student chose chicken pox as the topic, he/she could not provide three signs and symptoms because the three factors would be from one category. The students could have two factors from one category and one from another. An example would be if a student chose chicken pox, he/she could write on the card the following information: vesicles are observed, cool compresses may be used to relieve itching, and teaching about prevention should be done by recommending immunizations. This example gives a factor from signs and symptoms, interventions, and teaching.

The students were given at least 5 – 10 minutes to think and start writing. At this time, they worked on the activity on their own. I reminded the students that this was not for a grade so if the answer was incorrect, it was okay. I also mentioned that if incorrect information was stated, it would be clarified so no one left the review with incorrect information.

Once all students were finished, I asked, “Who would like to share the immunizations a child should receive by 9 years of age?” Students volunteered to share their answers. I did not call out student names because I did not want students to feel threatened at any time. Asking for volunteers did not put the pressure on an individual who may not be ready to participate in the review because of the question asked. I ensured that only one person spoke at a time so all students could hear and add

information as needed. The activity was a reflective thinking activity because as the students mentioned the immunizations children received by the time they are 9 years old, discussion and questioning occurred about each individual immunization. For example, students were asked to identify the side effects, for what adverse effects they would monitor, and to identify the teaching to be completed with the family before they would leave the facility. Once all the immunizations were discussed, I asked a question which is similar to this question: "If you were the nurse in a well-baby clinic, and a two-month-old child was brought in for immunizations, which would you recommend for administration?" Again, the students started listing the immunizations out loud, and the researcher and the other students acknowledged if they were correct or incorrect. Other discussions during this review included the contraindications of the immunizations and the routes and sites for administration which were important for students in the Child and Family Nursing course. Much of the information about immunizations is factual, but the information about side effects, adverse effects, and teaching could have been seen from previous experiences or knowledge.

Once this activity was finished, the next reflective thinking activity during this first Review session had the students discuss and dialogue about the disease or condition on the card and state the factors associated with it. At any time, students could add or challenge any information stated for the disease or condition in discussion. If a student challenged the information provided by another student, he/she needed to provide the correct information. Again, during this time, I would also challenge information if it was incorrect. It was important for me to remind students the reason for challenging

information was to provide the correct information for the topics addressed. After several students presented what they had listed, I asked several growth and development questions for discussion, such as “At what age does a child’s first tooth erupt?” or “If an infant weighs 8 pounds at birth and is 20 inches long, what will be the projected weight and length of this infant at 6 months of age?” Again, even though these questions were not necessarily reflective thinking questions, this was provided so the students realized the importance of asking questions and the necessity of them knowing this knowledge-based information in order to answer the higher level thinking questions.

For students to answer higher level thinking questions in the Child and Family Nursing course, they needed to know the base knowledge. This questioning, discussion, and dialogue continued until all students had participated or the two-hour limit was met. Many times if there were just a few students who did not get a chance to discuss a topic on their cards, we would continue past two hours, if the schedules of all involved allowed.

These reflective thinking strategies used during the first R.A.V.E. Review session provided the students time to reflect on their knowledge from reading the chapters, class discussions and notes, and power point slides in addition to the experiences from the clinical opportunities and any other previous experiences. During the first R.A.V.E. Review, I facilitated many questions to stimulate thinking.

For the second R.A.V.E. Review, students were asked to pick a topic, without looking, from a bag. The topics included any material covered since the first exam. Once all students had a topic, they had to visualize a child with the disease or condition and

explain what it was, the signs and symptoms, treatments, nursing interventions, and/or teaching involved with the condition. If the student picked a medication or topic other than a condition, he/she would discuss the importance of that medication or topic. I did not select which student went first, second, and so on; rather, two decks of cards were used. One deck was used to give each student a playing card. The second deck was for me to identify who went first. I threw the first card face up so the students could see it and called it out. The student holding that card provided his/her information. This continued until all students participated. This method was fun and provided random selection as to who presented the information first and so on. During this Review, if a student could not remember information about the topic picked, he/she could ask a friend to help. If the friend did not know what information to provide, I provided some questions to stimulate their thinking or provided a different perspective of the topic. At this time, any student could share his/her knowledge, information, and understanding about the topic. This activity allowed students time to think about what they knew, have experienced, and believed or assumed to be true. Again, during this review, all information shared needed to be correct so students knew and understood the correct information and were not learning incorrect information.

The third R.A.V.E. Review used a thinking strategy that provided students higher level thinking style questions. Questioning is documented as a reflective thinking strategy which provides not only learning at the current time, but also is known to produce a questioning attitude (Cornu, 2009; Forneris & McAlpine, 2007; Plack & Greenberg, 2005; Torsvik & Hedlund, 2008). Developing a questioning attitude is useful in nursing

because the nurse is the individual responsible for carrying out the orders and procedures performed on the clients. For nurses to question “why is this being done?” or “what is the rationale for doing this procedure at this time?” or “has any thought been given to trying another medication since the previous one did not produce the response wanted?”, nurses need to acknowledge they are the client’s advocate and need to know this information before going through with the order and/or procedure. This questioning was one of the hardest factors for nurses to develop because of lack of self-confidence, knowledge, and/or experience.

Therefore, this activity required students to pick a slip of paper from a bag which had a typed question addressing the information previously discussed in class or assigned to read. The questions required the students to apply and/or analyze their knowledge from reading, notes, class discussion, power point slides, and/or experience. For example, one of the questions I developed was as follows:

You are the nurse doing discharge teaching for the parents of a child diagnosed with celiac disease. What is this disease? How would a child look who has this disorder? Which food items are appropriate for this child? (select all that apply)

- a. Rice
- b. Oatmeal
- c. Rye toast
- d. Wheat bread
- e. Bananas

With a question like this, students needed to know the disease, the signs and symptoms to look for in a child, and food the child is allowed to eat. These questions, referring to one disease, were examples of higher level thinking questions. For students to arrive at the correct answers, they needed to have a base knowledge and understanding of what the disease was; they could use their knowledge or experience to analyze, apply, and synthesize the situation to form the answers. Once the student readed the question out loud, all students began to think. The student provided his/her answer, hoping it was correct, and waited for other students to accept or challenge the answer he/she provided. At this time, I would ask other questions to stimulate discussion. For instance, I would ask “Can this child have pizza?” Students then shared their thoughts, and to ensure correct information was provided, I explained why or why not pizza may be a choice. I did not know what questions would be asked on any of the exams since I was not responsible for teaching the course. I did know what was needed for students to think like a nurse in caring for children and their families. Again, discussion, dialogue, and sharing between colleagues provided students information they may not receive in the classroom or clinical since it was difficult to cover all the information necessary in class with the time restraints and the clients seen in clinical may not have the disorders discussed in the textbook. Activities such as these allowed students to express feelings, assumptions, and knowledge while learning from their peers.

For the fourth R.A.V.E. Review, the Survivor® game was used as a power point template. This free template was obtained from the website:

<http://www.murray.k12.ga.us/teacher/kara%20leonard/Mini%20T%27s/Games/Games.htm>

I followed the instructions provided and developed questions on the topics of hematology and oncology in pediatric clients. During this review, the question was displayed while music from the Survivor® show played. The students were then provided some quiet time to think about the answer. Students took turns answering the questions. Not only were the questions on the power point template answered, but I asked the students to expand on the information. I wanted students to begin thinking about what questions they should ask regarding a disease or condition. For example, if the student were assigned to care for a child with sickle cell anemia, I would ask him/her to explain what orders he/she would anticipate for this child. Once this was completed, I would ask him/her to think about nursing interventions and client and family teaching. I would emphasize that children are different even if they have the same diagnosis. For instance, one child with sickle cell anemia may get pain relief from sitting in a whirlpool bath while another child may need morphine. The students needed to be able to discuss these differences and anticipate providing different interventions for children with the same condition.

After each of the R.A.V.E. Reviews, I asked students for feedback. The fifth R.A.V.E. Review was the activity the students voted as their favorite. For this semester, the favorite activity was the multiple choice question which stimulated the students to think about information learned in previous course, from clinical experiences, the chapters in the textbook, or from class.

In all of the reviews, students worked and learned together in a learner-controlled, informal environment with the researcher serving as the facilitator. Again, during these reviews, attendance was optional, no grades were given, all questions were answered, and

information was clarified as needed. At no time were exam questions provided to the students participating in the R.A.V.E. Reviews. I provided consistent and immediate feedback during the Reviews. After each Review, each student received something fun, such as a drink packet mix, chocolate, pencil/pen, erasers, or any other little inexpensive item.

For each of the reflective thinking activities used, the facilitator needs in depth knowledge and experience of the subject. My knowledge and experience comes from being a pediatric nurse for 22 years. I have worked in a variety of settings from the emergency unit to the neonatal intensive care unit to a specialty floor. I have had many opportunities to share and dialogue with colleagues and have learned additional information from seminars and conferences.

Evaluation: Data Collection

The first two steps of data collection for this action research involved reflecting on the problem, acquiring feedback from students, and discussing the differences. The next step was to find a way to help nursing students improve their learning, answer exam questions, succeed, and prepare for real life situations. Even though I did not manually collect data during these first two steps, student feedback and input was gathered and a plan was developed.

The last step of data collection in this action research study was known as evaluation. In this step, the information which was gathered through observations, interviews, journaling, or any other method of data collection was reviewed and evaluated for effectiveness (Hendricks, 2006; Schmuck, 2006; Stringer, 2004).

According to Hendricks (2006), evaluation consists of observing, interviewing, journaling, and other data collection procedures. Six methods of data collection were used for this study: (a) observation data, (b) journaling, (c) semi-structured interviews, (d) a focus interview, (e) a questionnaire for the participating students, and (f) final grades. Hendricks (2006) mentions the importance of obtaining baseline demographic data from the participants, such as age, gender, previous experience which the researcher has addressed in the biographical data form (see Appendix B). The use of multiple data sources and triangulation were important to provide trustworthiness in the study.

The first data source I used was observations. I took notes during the five Review sessions on interventions, student responses, researcher responses, and events which occurred. I took notes during the Review sessions, but as Merriam (1998) stated, “it is imperative that full notes be written, typed, or dictated as soon after the observation as possible” (p. 104). I typed full notes as soon after each session as I could. The notes included my observations of the environment, nonverbal and verbal responses, and any activity that occurred. I also noted my feelings at this time. The observer observed what occurred before, during, and after each of the five Reviews. Two perspectives were used; one was from a participant observer and the other from an etic observer. As a participant observer, I provided notes while another individual provided field notes from the R.A.V.E. Reviews as she served as the observer. Mills (2007) explained that the researcher as participant observer is “the most common experiencing data collection technique” to use (p. 58). Once this information was collected, the observer and I compared observations.

The second source I used was journaling. Journals are personal documents which contain subjective data. Even though the data was subjective, the data was useful as it provided real reflections (Berg, 2007). The journaling was completed by the students, who attended any of the Review sessions, and me. Journaling by students who attended the R.A.V.E. Reviews was done after each Review and every exam. To keep the information confidential, the students did not put names on the journal pages and the journal page were collected by me after each Review and exam. The number of students completing the journals varied because attending the R.A.V.E. Review sessions was optional. The participating students documented their personal feelings and thoughts about the Review session which included what they liked about the experience, what they did not like, and what they would like to see in future Review sessions. After each exam, the students who participated in the Review session documented the impact they felt the Review session had on their achievement for that exam and any other impact the Review may have had on them. Once the transcribing of the journals was completed, I asked the students to review the information for completeness and accuracy.

I completed journaling frequently during the entire process which included the planning of the Review sessions to setting up the room, after the Review sessions, and any time I reflected on information appropriate to the study. The journaling included not only thoughts, feelings, perceptions, and actions in response to the reflective thinking intervention used, but also descriptions of the setting, participants, activities, and direct quotes. For the purpose of keeping accurate information, I carried a journal and an audio recorder in a bag at all times to capture any thoughts and ideas. The audio recorder was

used at times when I was unable to write down thoughts, such as driving in the car, sitting on a bus, or anywhere writing was not easily done.

The student journal information was kept confidential, and I did not require identification on the journal information. It was kept as anonymous as possible. This was a responsibility of the researcher to ensure the students writing the journals were aware of this information (Schmuck, 2006). Even though journals provide personal, subjective data, the information contained provided personal perspectives which included the meaning of the event attended which, as Merriam (2009) mentioned, was what qualitative research seeks. Journaling data enhanced the validity of the observations, interviews, and questionnaires.

Thirdly, one-on-one, semi-structured interviews and a focus group interview were conducted to address the impact the R.A.V.E. Reviews had on students' learning and success in the course. The one-on-one, semi-structured interviews tend to build rapport and provide a secure, less intimidating environment in which to share information. Berg (2007) states,

This type of interview involves the implementation of a number of predetermined questions and special topics. These questions are typically asked of each interviewee in a systematic and consistent order, but the interviewers are allowed freedom to digress; that is, the interviewers are permitted to probe far beyond the answers to their prepared standardized questions. (p. 95)

A focus group interview is an interview conducted by a facilitator which is sometimes called a moderator and a small group of individuals who discuss a particular topic or

interest (Berg, 2007). Berg contends one difference between one-on-one interviews and focus group interviews is the interaction and sharing which occurs among participants in the focus group.

Berg (2007) explained the advantages to focus group interviews includes flexibility of the participants to respond and participate and provides a better understanding of the group as a whole for the researcher. The disadvantages Berg described include the quality of data being influenced by the facilitator, the length of the interview is usually between 30 – 60 minutes, and a limited number of questions are used. However, the facilitator for the focus group interview was the same individual who conducted the one-on-one interviews. This unbiased individual knew what occurred during the one-on-one interviews, and she and I went through the focus group guidelines for conducting this sort of interview. We ensured the research problem and questions were identified for the participants as well as the importance of confidentiality. In order for the facilitator to be prepared, she and I met and discussed the questions and the importance of her allowing the participants to converse with one another on the topic and to avoid offering her opinion in any manner. The length of the focus group interview was between 60 and 90 minutes which was more time than Berg (2007) mentions. The number of questions asked during this focus group interview and the one-on-one interviews was 14. For this study, the disadvantages of most focus group interviews was addressed before conducting them and were eliminated by taking specific actions.

A pre-determined set of questions were used to obtain thoughts, feelings, and opinions about the R.A.V.E. Review sessions. The questions are as follows:

1. At the beginning of Child and Family Nursing, how did you prepare for this class?
2. Why did you participate in the R.A.V.E. Reviews?
3. To participate in the R.A.V.E. Reviews, attendees were asked to come prepared. What made you think you were prepared for the R.A.V.E. Reviews? Maybe, you were not prepared, why?
4. After attending the R.A.V.E. Reviews, did you do anything differently when preparing for the Child and Family Nursing class and/or exams? If so, what was it?
5. Did you find yourself preparing for other courses differently during this semester than you had in the past semesters as a result of your participation in the R.A.V.E. reviews? If so, how?
6. Tell me about your perspectives of the R.A.V.E. Reviews.
7. When thinking about the amount of time it took to prepare for the Child and Family Nursing class and exams, how, if at all, does it compare to your preparation in the other courses you have taken?
8. During the R.A.V.E. reviews which technique was (a) the most useful for you and why? And (b) the least helpful and why?
9. How did you feel about the different learning activities used for each R.A.V.E. Review?
10. What, if any, personal, work, professional, or academic changes have you made since participating in the R.A.V.E. reviews in Child and Family Nursing?

11. How, if at all, will the R.A.V.E. reviews help you as you transition from a student nurse to a registered nurse?
12. Would you recommend the R.A.V.E. reviews to other classmates? Why or why not?
13. Would you recommend the R.A.V.E. reviews to be offered in other courses? Why or why not?
14. Is there anything else you would like to say about the R.A.V.E. Reviews?

The interview was conducted by a neutral individual. This allowed students to provide their true feelings about the R.A.V.E. Review experiences. With a neutral interviewer, arguing, debating, and personal biases were limited or maybe even obsolete (Merriam, 1998) since this individual had no conceptions if this intervention was effective or not. This individual had a good knowledge of the study while still able to take a nonjudgmental stance which allowed for positive interaction (Merriam, 1998) and participants to respond truthfully. A neutral interviewer was used since I taught several of the nursing students during their clinical rotation in the hospital setting, and I conducted the R.A.V.E. Reviews. This neutral individual was a graduate student currently enrolled in a Master's Degree in the Science of Nursing program at another Midwest College of Nursing. She has three years experience as an emergency unit nurse who has also taken the leadership role of mentoring new nurses to the unit. The interviewer and I met before the interviews occurred to discuss any concerns or questions the interviewer had.

Even though a pre-determined set of questions were used, the interviewer was able to add or delete questions during the interview as appropriate, ask the questions in a random order, or even expand on one certain question which may provide rich content (Berg, 2007). Berg added that the flexibility of this type of interview establishes an informal sharing and interaction. The semi-structured interview provides the participants opportunities to add any information they feel important (Hendricks, 2006). The number of students interviewed depended on the number of students who attended all five of the R.A.V.E. Review sessions and their willingness to be interviewed. For instance, the attendance at the Review sessions varied from 5 to 30 students.

During the interviews, the interviewer asked the students to say the number which she picked to identify herself. The interviews were audio-taped and transcribed by me shortly after the interviews occurred. Also, during the interview, the interviewer took notes in case the audio tape recorder malfunctioned. The interviews were conducted in quiet locations which were familiar to the interviewer and participants. The audio-tape was given to me after each interview and kept in a locked cabinet, along with the transcriptions. I was the only individual with access. Once the interviews were transcribed, I provided the transcriptions to each interviewee to check for precision.

Another method of data collection was the on-line questionnaire, which was sent to all nursing students enrolled in the Child and Family Nursing course during the Spring and Fall 2010 semesters. This questionnaire was sent to the students via email after they received their grades for the course. Hendricks (2006) mentioned that questionnaires

may be provided to all participants in a study and include similar questions asked during the interviews. The questions on the questionnaire were:

1. Did you participate in any of the R.A.V.E. Review sessions held during the Child and Family Nursing course? If yes, continue to number 2. If no, continue with number 7.
2. What did you find the most beneficial about the R.A.V.E. Reviews?
3. What did you find least helpful?
4. Do you think participating in the R.A.V.E. Reviews and your final grade are related?
5. In what ways have your study habits changed or not changed as a result of participating in the R.A.V.E. Reviews?
6. Describe any potential long-term effects you feel attending the R.A.V.E. Reviews will have in your future as a nursing student and/or a nurse.
7. If you did not participate in the R.A.V.E. Reviews, what was/were the reason(s)?

Questionnaires with open-ended questions allowed for exploration of information and to identify comments which close-ended questions may not. Creswell (2005) identified a drawback to the use of open-ended questions as that of the response. The response may be short or long and the longer responses will add time during data analysis. On the other hand, responses may be more honest if the participants are aware of the anonymity and confidentiality in comparison to the interviews (Hendricks, 2006). The questionnaire included demographic data that each student completed. A summarized report of the questionnaire responses were provided for the students to review and acknowledge if the report correctly stated the thoughts and feelings gathered from the questionnaire. The students acknowledged that the summary was correct via email.

Another data source which I used was the students' final grades for the Child and Family course. One of the areas of focus was on the achievement of the students who attended the R.A.V.E. Reviews during the semester. Reviewing the final grades of the students who attended all five Reviews told me if they were successful, which meant they achieved an average score of 76% on all exams in the course before any assignments were included in their grade. This is a policy within the college of nursing program which faculty are to adapt in their syllabi for the courses they teach.

In summary, the six methods of data collection provided greater validity to this study. With this variety, a rich description of the data collected was available. With this said, triangulation and member checks were strategies used to enhance the validation (Merriam, 1998). Merriam provides explanations of these strategies and a summary of these strategies follows. Triangulation was achieved by using three or more sources of data or methods to confirm findings. Therefore, by using six methods of data collection, triangulation was met. Member checks were accomplished by asking the individuals who participated in the interviews and the observer through her observations, if the information transcribed was correct. For this study, the participants and observer stated the information was correctly transcribed. The data collection occurred between January, 2010 and December, 2010 by using six methods. The resources and number of students participating in each method were as follows: (a) questionnaires, 65 students; (b) journals, 45 students; (c) observations, from all five Review sessions, (d) one-on-one interviews, 3 students; (e) focus group interviews, 7 students; and (f) final grades, 65 students.

Data Analysis

According to Holloway (2009), data analysis “consists of the organization, management and evaluation of the data collected and drawing information, inferences or conclusions from them which are related to the research problem or question” (p. 63). Grounded Theory approach was used to analyze the data in this research study. Bryant and Charmaz (2006) defined Grounded Theory as “a method of conducting qualitative research that focuses on creating conceptual frameworks or theories through building inductive analysis from the data” (p. 608). Several characteristics of Grounded Theory include, but are not limited to: (a) data collection, organization, and analysis is done simultaneously (Strauss & Corbin, 1998), (b) data builds theory (Glaser & Strauss, 1999; Strauss & Corbin, 1998), (c) theoretical sampling is done to follow up concepts (Corbin & Strauss, 2008), (d) constant comparisons of transcripts is done (Corbin & Strauss, 2008; Strauss & Corbin, 1998), (e) analysis is done through open, axial, and selective coding (Draucker et al., 2007; Strauss & Corbin, 1998), (f) the use of field notes and memos (Charmaz, 2006; Corbin & Strauss, 2008; Montgomery & Bailey, 2007), and (g) the researcher does not work alone (Corbin & Strauss, 2008).

First of all, the importance of having the data organized and controlled so it is easily assessable for the researcher was done. The data from the observations, journals, questionnaires, and interviews were coded in a line-by-line manner (Merriam, 1998). For the interviews, a name and number which was selected by each individual student was used to identify the student (Merriam, 1998). This allowed for anonymity but still provided the necessary demographic data for comparisons.

To analyze all data, open and axial coding was used. According to Strauss & Corbin (1998), open coding was defined as “the analytic process through which concepts are identified and their properties and dimensions are discovered in data” (p. 101). The open coding began after the first piece of information was collected and continued throughout the study. Open coding was accomplished in a line-by-line manner for all transcriptions. Using the line-by-line coding minimizes losing important data and categories (Glaser, 2004). All transcriptions from the interviews, journals, observations, on-line questionnaire, field notes, and memos were coded and commonalities identified. Once this was done, axial coding was used to identify the connection between the categories and sub-categories which arose during open coding (Draucker et al., 2007). In addition to the categories and sub-categories, the properties and dimensions were noted. The property provides a description of the category while the dimension provides the breadth or range of the category (Strauss & Corbin, 1998). Categories were formed via looking at what the words were suggesting and meaning. I found it helpful to color code the categories by using colored sticky notes and highlighters.

For example, I began the coding process in a line-by-line manner and noted frequently appearing words and phrases such as, “think reflectively”, “thinking this way”, “retain the information”, “hearing information over and over”, “repetition”, “time to think”, “open discussion”, “multiple choice questions”, “questions to improve critical thinking and memory”, “we all had to contribute” and “spark a discussion and then building off of it” which are just a few noted throughout the transcripts. These words and phrases lead me to think of several concepts such as learning, methods, environment, and

participation. After consistent questioning, review, and comparison of the transcripts and using axial coding, the commonality of facilitating learning arose. This is how the category of facilitation of the learning process was formed. After this category was formed, I reviewed the concepts of the category and formed subcategories such as metacognition, participation and engagement, environment, and methods used. The categories, subcategories, properties, dimensions, and examples are identified in a code sheet (Hendricks, 2006) which is included in chapter four.

During the entire process, constant comparison of the information, which came from field notes, observations, journals, questionnaires, and interviews, occurred (Strauss & Corbin, 1998). Field notes were identified as descriptions of interactions, feelings, and/or thoughts that occurred in order to identify the actions or behaviors of the participants, the characteristics of the setting, or any connection that assisted in getting the true feeling of the situation (Montgomery & Bailey, 2007). Once the data repeated and no new information was attained, saturation was met and the collection of data stopped (Merriam, 1998). After the third one-on-one interview, much of the same information was heard. During the Focus group interview, the participants mentioned many of the same thoughts and feelings, such as feeling valued, the facilitation of learning, and the professional development as had been transcribed from the one-on-one interviews. To add validity, the on-line questionnaire which asked several of the same questions, provided more of the same feedback.

The method for data analysis for this study was Grounded Theory. This method provided the researcher the ability to identify any gaps in knowledge and/or information

which would build theory. The development of the code sheet allowed for easy access to the overall categories and ideas involved with this study.

Issues of Trustworthiness

Before an action researcher begins to analyze data, it is important to ensure the quality of the data. In qualitative research, trustworthiness involves identifying that the evidence, provided by the researcher, represents the reality of the situations and/or individuals studied (Bloomberg & Volpe, 2008).

To provide research findings that are trustworthy, they must be valid and reliable. The validity of a study depends on the “truth, value, and authenticity” of the findings (Holloway, 2009). Merriam (1998) claimed internal validity occurs when the results of the study are true or “match reality” (p. 201). This is measured by several means which includes triangulation, member checks, peer examination, and researcher biases (Merriam, 1998, pp. 204 – 205). External validity is met when the findings can be applied to other situations (Merriam, 1998). To provide external validity, Merriam suggested providing a “rich, thick description, typicality or modal category, and multisite designs” (pp. 211 – 212). Detailed information has been provided about this study and the participants so other researchers can compare similarities from this study to their own situation or research. The reliability of a study is linked to the reproducibility or repeatability of the study (Green & Thorogood, 2004; Merriam, 1998). Reliability of a study is noted by using a few techniques such as identification of the researcher’s assumptions; the use of multiple methods of data collection; and providing an audit trail (Merriam, 1998).

Six sources of data collection were used for this study: (a) observation data, (b) journaling, (c) semi-structured interviews, (d) focus group interview, (e) a questionnaire, and (f) final grades for the participating students. Not only was triangulation used, but also member checks, and researcher biases which all provided validity for this study. Member checks or member validation occurred by taking the interview transcripts back to each interviewee to check for accuracy (Berg, 2007; Merriam, 1998). My bias was that since I use reflective thinking consistently to continue my learning, it may be a method for nursing students to learn, also.

Reliability was met by identifying my assumptions, using multiple methods of data collection, and providing an audit trail. An audit trail which is described by Holloway as “a clear description of method and procedures” is provided as a step-by-step description by the researcher during this research study for reproducibility (p. 238).

Other factors to enhance the validity of this study, the researcher was not teaching a Child and Family Nursing course as data was collected during the Spring and Fall, 2010 semesters. By the researcher not teaching the course, the control of the students’ grades was not an issue. Another factor which added to the validity of the study was that the researcher had no idea of the questions asked on the exams which also decreased the risk of addressing only the information which may be presented on the exam during a R.A.V.E. Review.

The six methods of collecting data provided multiple perspectives. The interviews and participant observer interaction allowed for comparing and integrating information from the subjects, observer, and researcher. The journals allowed the voice

of the participants in their own words. The questionnaires and final grades allowed for a holistic picture of the situation and what occurred with the students who opted to not participate in the study. The combination of these methods added validity to this study.

Ethics of a research study was an important factor to address. According to Schmuck (2006), ethical principles should be followed. These principles included that the plan of the study was explained to those involved, the informed consent form was signed, and the data was kept confidential. For this study, students were told the R.A.V.E. Reviews were an optional opportunity for them and that attendance had no effect on their grade for the course. The IRB approved the consent form and the students were asked to read and sign it if they were interested in participating. They were told that at any time they could drop out of the study with no repercussions. Anonymity and confidentiality were addressed through obtaining a neutral interviewer who used pseudonyms during the interview process, asking students to omit their names on the journal entries, and omitting names from the questionnaires. Participants were told they would have a chance to review the transcription of the audio tapes and make changes as they saw necessary. All tapes and data were stored in a locked cabinet to prevent access by unauthorized personnel and information on my computer hard-drive was password protected. Once the research and analyses were completed, all the data was destroyed.

Validity, reliability, and ethics were necessary components of this research study. For the study to be believable and trustworthy, these components were addressed. Using triangulation, member checks, and an audit trail trustworthiness was enhanced. In

addition, ethics was upheld by ensuring anonymity and confidentiality by destroying the audiotapes and keeping the transcripts in a locked cabinet.

Limitations

This study contained certain limiting conditions. One of the main limitations of this study was the subjectivity and potential for bias regarding my participation in the study. My past experiences in teaching the course for four years and my knowledge of the information provided in the course may provide this bias. Through observation, the information documented provided tangible evidence of what occurred, which deterred the chance of bias. Another limitation was that the study was limited to two semesters of data collection from senior-level nursing students. This limited the amount of feedback acquired. However, the study was based on four years of comments received during one-on-one meetings with students, mid-semester evaluations, and end of the semester evaluations. Having the presence of an individual as an observer posed a limitation because the students realized an unknown individual was present.

Chapter Summary

This chapter provided a detailed description of the method used for this study. A qualitative action research design was used to illustrate reflective thinking activities used with nursing students in a Child and Family Nursing course. The population consisted of 65 students who were enrolled in this course during the two semesters this study was conducted. Six data collection methods were employed, including observations, journaling, one-on-one and focus group interviews, a questionnaire, and final grades for

the course of students meeting the criteria for the study. Trustworthiness was met through various strategies, including triangulation.

Data analysis allowed key categories to be identified. The intent of this study was to make a contribution to nursing education and nurses' lifelong learning. Additionally, it was hoped that this study would be of value to other nursing educators in academia or hospital settings who are responsible to promoting an individual's higher level thinking and lifelong learning.

Chapter 4 will provide the results for each category and subcategory for this study. In addition to the results, interview questions and the responses which have not been addressed, are presented. Lastly, the challenges during this study are identified.

CHAPTER FOUR: RESULTS

As specified in Chapter 1, the purpose of this research study was to explore the impact of a reflective thinking intervention that utilizes reflective thinking activities with nursing students. The goal was to examine how nursing students think about past experiences, their knowledge and beliefs through discussing, questioning, and thinking out loud to arrive at appropriate answers and/or solutions to exam questions and real life situations. The primary research question posed was: Does a reflective thinking process influence nursing students' preparation for exams and achievement in a Child and Family Nursing course? Related questions were: How do reflective thinking activities impact the study habits of nursing students? What factors affect the learning environment during a reflective thinking process to make it conducive to learning? What changes, if any, do nursing students notice about themselves personally, professionally, and/or academically after participating in a reflective thinking process?

Throughout the data collection and analysis, attempts were made to support trustworthiness by using triangulation, member checks, peer examination, and researcher biases (Merriam, 1998, pp. 204 – 205). Triangulation was accomplished by using more than three sources of data collection. The main sources were observations, journals, semi-structured interviews, a focus group interview, and a questionnaire. The member check was accomplished when the interviewees were asked to review the transcriptions of the interviews to ensure accuracy of the information. The researcher coded all transcripts and hired an expert to perform an independent data analysis. Once all coding

was completed, the researcher and hired expert met and compared findings. The researcher's biases were identified and reflected upon throughout the process.

The study participants were part of the Child and Family Nursing course either from January 2010 through May 2010 or August 2010 through December 2010. Several face-to-face interviews and a focus group interview were completed by a Master's degree nursing student. The interviews lasted about 60 – 90 minutes. For each of the interviews, 14 questions were used as a guide. However, the interviewer was encouraged to offer open-ended questions throughout and encourage additional comments. The interviewer stated at the beginning of the interviews the research question and secondary questions which were being studied.

The demographics of the students who participated in the one-on-one or focus group interviews are provided in Table 2. This is a brief overview of the information collected from the participants in order to ensure anonymity.

Table 2: Overview of the Interviewees

Interview	Demographics
One-on-One Interviews (all interviewees from the accelerated BSN program)	Student 21: 35-year-old Caucasian male
	Student 30: 32-year-old Caucasian female
	Student 99: 30-year-old African-American female
Focus Group Interviews (all interviewees from the traditional BSN program)	Student 1: 21-year-old African-American female
	Student 2: 36-year-old Caucasian female
	Student 3: 22-year-old Caucasian female
	Student 4: 28-year-old Caucasian female
	Student 7: 25-year-old African-American female
	Student 16: 48-year-old Caucasian female

Once the data was collected, transcription and analysis took place. After the transcription of each piece of data, units of information were identified. When the data were transcribed, the right-hand margin was increased to allow for coding. Open and axial coding were performed for the analysis of the data. A line-by-line coding was used and colored sticky tabs and highlighters were used to identify the different labels, words, or phrases. As new or different data arose after comparing it to existing data, a new label or concept was created. Next, the concepts were reviewed and grouped together according to similarity under a category that captured the idea of the entire group of data.

During the analysis, the constant comparison method was used for this study. In the constant comparison method, a new piece of data is compared to an existing piece of data (Strauss & Corbin, 1990). This method allowed the researcher to identify repeated information and its relevance to the participants. Corbin and Strauss (2008) encouraged the use of questions when coding data and these include: “what is happening” and “what does the data suggest” (p. 73). These two questions then lead to open and axial coding which identify the categories and subcategories and relationships between and within the categories and subcategories around which the data revolves (Strauss & Corbin, 1990).

In this chapter, data from students’ journals, observer and participant observer journals, interviews, and an on-line questionnaire are reported and interpreted. After transcribing and coding the data, categories emerged. Three categories emerged from the data. They are (a) learning process facilitation; (b) value; and (c) professional development. These three categories are described in the following pages, but Table 3 provides an overview of the categories developed.

Table 3: *Overview of Categories Developed*

Category	Subcategory	Properties	Dimensions	Example
Learning process facilitation	Metacognition	How students think about what is being read, taught, or demonstrated.	Surface learning versus deep learning; Early versus late	Helped me to think, made me study sooner, wasn't deep enough, gives me time to think, think on my feet
	Participation and engagement	Interaction during learning facilitation	Inactive versus active participation; Individual versus group	Everyone participated, small group discussions, we all contributed
	Environment	Surroundings in which the learning is taking place	Relaxed versus stressful; Openness versus intimidation; Positive versus negative	Relaxed, not high pressure, conversational, open, friendly, feedback provided
	Methods used	Activities used to facilitate learning	Open-ended versus close-ended questions One time information versus repetition of information	Repetition, questioning, multiple choice questions
	Recognizing strengths and weaknesses	Knowing what one knows and on what one needs improvement or a change	Known versus unknown; Negative versus positive feedback; Own versus peer perspective; Alone versus with colleagues	Know on what areas to focus, know what I know well; self awareness; peer perspectives
Value		Listen and value contributions, recognized	Low versus high self confidence Discouraging versus encouraging	Encouraging, knows our names; wants us to succeed, boosts confidence
Professional development	Bridging the gap from theory to practice	The ability to put words into actions	Pieces versus the completed puzzle	Seeing the big picture, brought it all together, reasoning
	Linking self to the professional role	An understanding of what is expected in the future for this profession	Respect versus disrespect; Open versus closed	Respect, open-minded, responsibility

Learning Process Facilitation

The learning process facilitation category spanned from student thinking, recognizing strengths and weaknesses, active involvement, the environment, to the best method used during the R.A.V.E. Reviews.

Metacognition

For example, Student 1, a 21-year-old, African-American female enrolled in the traditional BSN program stated “I wouldn’t have studied that early.” (Focus group interview, line 797, January 7, 2011). Another traditional BSN student, age 25, indicated that “Sometimes what I went through wasn’t deep enough so when I would go to the R.A.V.E. Reviews, the questions were more detailed than what was in the book or in class.” (Focus group interview, lines 165 – 166, January 7, 2011). In a one-on-one interview with Student 21, a Caucasian male, 35 years old, in the accelerated BSN program, commented “You made us think on our feet” (line 32, June 24, 2010). In addition to the interview comments, students’ journal entries after each R.A.V.E. Review and exam are reflective of this category.

- “I think these reviews help me with thinking through the questions, and they break down the information for me.” (Journaling after Exam 3, lines 2 – 3, March 19, 2010)
- “It provides examples of how I should think.” (R.A.V.E. Review #5, line 3, April 30, 2010)

- “I like the questions and the fact that we have time to think about it and are not put on the spot.” (R.A.V.E. Review #1, lines 22 – 23, September 13, 2010)
- “It made me review earlier instead of for only a few days.” (Journaling after Exam 5, line 3, November 29, 2010)
- “The review makes me read before I attend so I know some of the information. (Journaling after Exam 5, line 7, November 29, 2010)
- “The review makes me space out my studying.” (Journaling after Exam 5, line 9, November 29, 2010)

For students to retain information, they need to be given time to think about questions before providing answers if a higher level of thinking is encouraged (Benner et al., 2010; Shulman, 2004). In healthcare, nurses are given many challenging situations which require them to think about many areas at one time and how they affect each other. For instance, for every patient, the nurse needs to be able to think how the medications, laboratory results, diagnosis, procedures, and interventions work together while also caring, supporting, and effectively communicating and interacting with the patient, family, and co-workers. The nurse also needs to know that each individual is unique and may have different responses to specific medications, procedures, and/or interventions. This information comes close to the description of facilitating the learning process by Rogers (2002) as the ability to impart that knowledge is not static and as the world continues to change, being inquisitive, curious, and adaptive to the change is the goal for students to attain.

Recognizing Strengths and Weaknesses

The subcategory of recognizing strengths and weaknesses emerged from several student comments. For example, during the focus group interview, Student 7 commented “Even when I found the information not helpful for the tests; I found the information I remember better and was able to even help use it in other classes” (lines 51 – 53, January 7, 2011) while Student 3 added “The R.A.V.E. actually pinpointed things where I found my weaknesses were and I didn’t know the information as well as I thought I did” (lines 198 - 200, January 7, 2011). These comments captured the students’ realization of what they knew and what they did not know or understand just as Student 99 added “It’s really a test of what you do know and what you don’t know” (line 149, July 1, 2010).

Additional statements from students were made in journal entries.

- “I think this review helped me think a lot. It helped me realize what I really need to review.” (R.A.V.E. Review #1, line 3, January 22, 2010)
- “This review was beneficial and helped me to know the areas I need to improve.” (R.A.V.E. Review #1, line 4, January 22, 2010)
- “It helped me broaden my perspective of topics and helped me learn from others.” (R.A.V.E. Review #1, lines 15 - 16, January 22, 2010)
- “I like how it assessed what we know and what we don’t know; the discussion of topics without looking at our notes is very helpful.” (R.A.V.E. Review #3, March 12, 2010)
- “All of the other viewpoints add to my understanding of the material as well” (R.A.V.E. #2, line 14, October 4, 2010)

Student Participation and Engagement

Not only does the facilitation of the learning process involve student thinking and recognizing strengths and weaknesses, but also student participation and engagement. Several comments supported this subcategory. Student 7 commented “Students were very free, I mean it wasn’t like a lecture that you sat and listened to and got up and left. Everyone participated” (Focus group interview, lines 313 - 315, January 7, 2011), while Student 29 mentioned “This helps us work together as a team--it was an exchange of information” (Interview, line 187, July 1, 2010). In addition, Student 1 commented “I like that we all had to participate” (Focus group interview, lines 369 – 370, January 7, 2011). Students made comments in their journals which reflected this category.

- “I like this review because of the small group discussions.” (R.A.V.E. Review #2, line 4, February 19, 2010)
- “Having the Survivor game and questions helped me critically think as we discussed it as a group” (R.A.V.E. Review #4, lines 6 – 7, November 1, 2010)

Students who take an active part in learning, learn more than the students who sit back and listen (Brophy, 2010; Chickering & Gamson, 1987). Not only did the participants recognize that everyone was required to participate, but also that the group discussion enhanced teamwork and critical thinking as suggested by the following comments:

- “This helps us work together as a team--it was an exchange of information” (Interview, Student 29, line 187, July 1, 2010)

- “It helped me broaden my perspective of topics and helped me learn from others.” (R.A.V.E. Review #1, lines 15 - 16, January 22, 2010)

Environment

Another sub-category under the learning process facilitation is the environment. For instance Student 16, a 48-year-old Caucasian female in the traditional BSN program, commented “I felt that the environment was very relaxed, not high pressure” (Focus group interview, line 867, January 7, 2011) and “I never felt that if I went to a R.A.V.E. review, and I didn’t know anything that I would be ostracized” (Focus group interview, lines 870 - 871, January 7, 2011). Another traditional BSN student, Student 3, who was a 22-year-old Caucasian female, added “I felt the environment was very open, friendly, relaxed, there was no pressure on you to know the right answer; if you didn’t know the right answer, you could phone a friend or poll the audience” (Focus group interview, lines 885 - 887, January 7, 2011). Additional comments from students in the focus group interview and an accelerated BSN student, a 35-year-old Caucasian male, during a one-on-one interview, revealed similar comments.

- “I would say it was more laid back than class because class was a little more regimented whereas that was a little more like ‘hangin’ out’, answering questions and making it more of a fun, open forum whereas class you have to stick to time, you have to cover a certain amount of material during a 2 – 3 hour period.” (Interview with Student 21, lines 100 – 103, June 24, 2010)

- “It was a very conversational atmosphere.” (Focus group interview, Student 7, line 878, January 7, 2011)
- “I feel the environment was relaxed, and I like how she would be light-hearted, tell jokes, and things like that.” (Focus group interview, Student 1, lines 896 - 897, January 7, 2011)
- “She was interested in us learning and making it fun!” (Focus group interview, Student 1, line 937, January 7, 2011)

Benner et al. (2010) noted that providing an environment which builds on the students’ knowledge with guidance, care, and integrity allows the students to develop from a simple way of thinking to a more complex or high level of thinking. Not only are these components important in a learning environment, but O’Connor (2001) believed providing positive feedback to students enhances their learning. For instance, several students commented in the journal entries regarding feedback.

- “This was very helpful. It points me in the right direction for studying” (R.A.V.E. Review #2, line 12, February 19, 2010)
- “I liked the interacting with others and the feedback” (R.A.V.E. Review #1, line 17, September 13, 2010)
- “It was similar to a nice study session which was extra beneficial because the teacher was there to clarify” (Journal after Exam 1, lines 21 – 22, September 20, 2010)

The participants for this study provided insight into the environment during the R.A.V.E. Reviews which included that it was relaxed, fun, open, and friendly. During this study, I used several classroom configurations for seating. During the first and second R.A.V.E. Reviews, a traditional classroom setting was used. From my observation, students were consistently turning around to see who was talking and then redirecting their focus to me. I knew the seating arrangement needed to be one in which all students could see each other and me. As the participant observer, I sensed that students wanted to see each other instead of talking to someone's back. The degree of interaction generated from changing the room configuration exemplified the necessity of students having eye contact with one another during discussions.

Methods Used

Lastly, for the learning process facilitation, I found the methods used were frequently addressed in the journals, interviews, and questionnaire. Just as I mention to students on a regular basis when caring for a child, "each child is different", and the nursing intervention that works well for one child may not work well for another child with the same diagnosis. The methods used involved variety since every individual learns in his/her own manner. Student 16 commented "I think the most helpful method for me was when we would get a question or topic, and we would have to pull from our knowledge about the topic" (Focus group interview, line 453, January 7, 2011), while Student 2, a 36-year-old Caucasian female from the traditional BSN program, added "It wasn't just that you were asked one question on a topic; she would say 'oh, yeah, so what else should you know about this?'" (Focus group interview, lines 515 - 516, January 7,

2011). Student 3 mentioned “It (multiple choice questions) just seemed like it was a springboard to focus on a topic a little bit closer” (Focus group interview, lines 524 - 525, January 7, 2011) while Student 4, a 28-year-old Caucasian female in the traditional BSN program, expressed “One of my favorite times was when someone in class said the answer is ‘b’ and someone else said ‘c’. She would be like ‘well...’ which opened up a debate” (Focus group interview, lines 538 – 539, January 7, 2011). Other statements made were:

- “I believe thinking and asking questions will help think about different classes as well!” (R.A.V.E. #1, lines 25 – 26, January 22, 2010)
- “The rave helped me with the exam because of the questions and discussion” (Journaling after Exam 4, line 2, April 6, 2010)
- “You’re really the only one that has a R.A.V.E. review of that open sort of forum.” (Interview with Student 21, lines 70 – 71, June 24, 2010)
- “If you switch it up a little bit it makes people think differently too I think.” (Interview with Student 21, lines 162 - 163, June 24, 2010)
- “I feel like it helped to prepare me in a different way than in class” (R.A.V.E. #4, lines 14 – 15, November 1, 2010)

In summary of the category “learning process facilitation”, allowing students time to think about a scenario or situation in a non-intimidating, focused environment which involved students’ recognition of the information/topic in which they needed improvement by participating and contributing during discussions, visualizations, and questionings of scenarios suggested some answers to the research questions for this

study. This category of facilitation of the learning process surfaced throughout the journals, interviews, and questionnaire. Components of the categories and subcategories were expressed by the participants in unique ways. The next section will provide details surrounding the value category.

Value

The value category involved the students feeling valued and recognized for their contributions. Data collected in the course of this study provided several examples. Regarding students emotions of feeling valued and motivated, Student 4 made several comments “I would just like to say that I really did appreciate the R.A.V.E. Reviews and all the time Vicky spent doing them!” (Focus group interview, lines 900 – 901, January 7, 2011), “She definitely went above and beyond what she was asked to do as a teacher.” (Focus group interview, lines 926 - 927, January 7, 2011), and “I was just thankful she was interested in us learning so much and how she wants to make learning fun!” (Focus group interview, lines 936 - 937, January 7, 2011). Other student comments included Student 7 who mentioned “She is willing to put that extra step for us and we are all very appreciative of that” (Focus group interview, line 941 - 942, January 7, 2011) with Student 2 adding “It was really nice to have a teacher who was enthusiastic and really cared and gave so much of her own time just to help us!” (Focus group interview, lines 916 - 917, January 7, 2011).

Student 3 provided this comment “She never said ‘no, that’s not right’; it was – ‘let’s see if someone else has something to add to that’. You were never wrong or put on the spot” (Focus group interview, lines 348 – 350, January 7, 2011) while Student 4

added “We had Vicky who was determined for us to succeed. She, it wasn’t anyone in particular, it was us as a group she wanted us to succeed and she wouldn’t hand you anything. She really wanted us to know what we were talking about and to have that information drilled into us” (Focus group interview, January 7, 2011). These two student comments suggested the respectful attitude provided to students, in addition to challenging their knowledge, understanding, and/or use of reflective thinking. DeYoung claimed “An effective teacher is skillful in interpersonal relationships” (2009, p. 4). These relationships include being honest with the students, listening, and accepting the students as worthwhile individuals (DeYoung, 2009).

A student not identified during the focus group interview shared information from the beginning of the semester by stating “She knew all of our names the first day of class” (Focus group interview, line 928, January 7, 2011) and “She knew all of us, and greeted us as we were walking in” (Focus group interview, line 929, January 7, 2011). This student comment suggested that the teacher provided students a sense of belonging, value, and positivity. Other comments from several student journal entries suggested feeling valued.

- “Today I thought the RAVE review was helpful because it allowed me to hear what my classmates said and how they think.” (R.A.V.E. #2, lines 26 – 27, February 19, 2010)
- “I liked that it was okay if someone didn’t know all the answers” (R.A.V.E. #1, lines 37 – 38, September 13, 2010).

- “I also like how we pretty much run it and discuss everything we know”
(R.A.V.E. #2, lines 2 – 3, October 4, 2010)
- “Helpful in boosting confidence on what I know.” (R.A.V.E. Review #2, line 24,
October 4, 2010)
- “It was helpful that classmates could help each other with decision-making.”
(R.A.V.E. #2, lines 7 – 8, October 4, 2010)
- “The support you give in the review is great! And greatly appreciated! Thanks
for caring!” (Journaling After Exam #2, line 6, October 18, 2010)
- “You continue to be open to questions during the reviews which has helped me a
lot.” (Journaling After Exam #4, line 4, November 8, 2010)
- “Working together as a class motivates us to think hard and make decisions.”
(R.A.V.E. #5, lines 4 – 5, November 15, 2010)
- “You are very inspiring. I wish you could provide this for every class.” (R.A.V.E.
#5, lines 12 – 13, November 15, 2010)
- “I like how you continued to be open to any questions from students.”
(Journaling After Exam #5, line 5, November 29, 2010)

Professional Development

Two subcategories emerged from the data which reflected the category of professional development. These subcategories are bridging the gap from theory and clinical and linking self to the professional role.

Bridging the Gap from Theory to Practice

Bridging the gap from theory to clinical emerged as a subcategory during the data analysis. During a one-on-one interview, Student 21 commented “Just that thinking outside the box sort of thing kind of....seeing a scenario and going through your head and like thinking why this is going on and why is this happening” (lines 31 – 32, June 24, 2010) and “I found it very helpful because you didn’t just sit there and give us answers, you made us think on our feet” (lines 31 – 32, June 24, 2010). During another interview, an accelerated BSN student commented “A lot of the questions were like ‘if you have this.....and you are the nurse. What are you suppose to do in this situation?’ and ‘call the doctor’ was never the answer so I was like.....as a nurse right now, what are you responsible for doing?” (Student 99, lines 220 - 222, July 1, 2010). Just as these comments suggested, students were required to make connections during the Review sessions and if they could not, guidance, coaching, and role modeling were provided on how to get to a solution. Benner et al. (2010) stated “They need more connections between what is taught in the classroom and their clinical experiences” (p. 64). Many journal entries addressed this subcategory, also.

- “The Rave review is an excellent learning tool because it allows us to think through situations using both textbook information and real life information.” (R.A.V.E. Review #1, lines 18 – 19, January 22, 2010)
- “I think the Rave Reviews are extremely helpful to get overall idea of nursing care of patients with each disease/disorder.” (R.A.V.E. Review # 3, lines 3 – 4, March 12, 2010)

- “I feel that my reasoning in questions I don’t know has increased. Even if I don’t have any idea I can think through the questions and pick a good guess.” (R.A.V.E. Review # 3, lines 13 – 15, March 12, 2010)
- “Today’s Rave Review was very helpful because I was able to think like a nurse to answer NCLEX-style questions.” (R.A.V.E. Review # 4, lines 14 – 15, April 9, 2010)
- “I think it brought it all together for me.” (R.A.V.E. Review # 1, line 10, September 13, 2010)
- “Today’s R.A.V.E. asked questions which really helped me to pull things together; open-ended help me to think outside the box.” (R.A.V.E. Review # 4, lines 11 – 13, November 1, 2010)

In each of the above statements, the participants addressed how the R.A.V.E. Reviews helped them make connections, increase their ability to reason, and take pieces of information and put it together to see the whole picture. The skills of thinking like a nurse or problem solving continue to be a goal for nursing faculty. These skills are necessary to instill in nursing students so they provide safe and quality client care (Benner et al., 2010; Ireland, 2008; Tanner, 2006).

Linking Self to the Professional Role

Another subcategory associated with professional development was linking self to the professional role. The focus group interview generated several student comments regarding this subcategory. For instance, Student 7, commented “It taught me to be open, because you really don’t know where your niche is and you got to be open to

experiences” (lines 641 – 642, January 7, 2011), “I think it taught me to keep my mind open as well as to be respectful of what others bring to the table” (lines 648 - 649, January 7, 2011), and “You won’t always know and it’s okay to ask somebody as well as other people who can explain to you how they got to where they are today” (lines 653 - 654, January 7, 2011). Another student during the focus group interview stated “One thing I learned from Vicky is that the importance she stressed on how big of a job it is to be a pediatric nurse because you’re not just taking care of the person, you are taking care of the whole family” (lines 675 - 676, January 7, 2011) and “The skills that I learned, the communication skills that I learned from Vicky, I was able to step in where that nurse didn’t” (lines 683 – 684, January 7, 2011).

According to Benner et al. (2010), respect, lifelong learning, communication, open-mindedness, and questioning are a few of the factors necessary for the nursing profession. In addition, Schaeffer (2002) believed that students who take the time to reflect realize new aspects of themselves, such as, behavior and actions in specific situations. Student 7 stated “One of the biggest things that I learned through Vicky and R.A.V.E. is that even though we are near the end of our education we are really not because it is a continuous thing that we, she, who has been in it for 20 some years, is still learning and we will always continue to learn” (Focus group interview, lines 697 – 699, January 7, 2011) and “We are just beginning to learn and will always be building on what we already know throughout our nursing career” (Focus group interview, lines 703 – 704, January 7, 2011). These statements suggest that students recognized that learning in nursing is a lifelong endeavor.

Additional Interview Data

Since there were a total of 14 interview questions asked, but not all questions have been addressed in the results, they are addressed in this section along with the responses given by the participants.

The first interview question was “At the beginning of Child and Family Nursing, how did you prepare for this class?” Student 16 in the focus group interview commented “Just sort of skimming the book and reading the Reviews and Rationales” (lines 19 – 20, January 7, 2011) while Student 2 stated “I read the book and then just went to lecture and then the R.A.V.E. reviews” (lines 23 – 24, January 7, 2011). Student 3 mentioned “I think I read the book and went through her notes that she had posted for class” (lines 26 – 27, January 7, 2011). Other student comments referenced skimming the book, reviewing the highlights of the chapters, or not doing anything.

Question two was “Why did you participate in the R.A.V.E. Reviews?” The main response received from the students was for the repetition of the information. As Student 3 commented “It was repetition I mean one exposure is good uh two exposures is better and three it really sticks with you” (lines 66 – 67, January 7, 2011). Student 4 added “It wasn’t just necessarily Vicky teaching, it was, you would hear your peers give their rendition of what a definition was” (lines 71 – 72, January 7, 2011) while Student 1 commented “I really wanted to do good in peds because I want to do peds” (lines 80 – 81, January 7, 2011).

Question three was “To participate in the R.A.V.E. Reviews, attendees were asked to come prepared. What made you think you were prepared for the R.A.V.E.

Reviews? Maybe, you were not prepared, why?” This question had a variety of answers which included reviewing the Reviews and Rationales book, reading the textbook, and attending lectures. However, the common response was as Student 7 stated “normally doing the worksheets that she posted sometimes they were questions and sometimes they were care plans and sometimes they were crossword puzzles” (lines 108 – 109, January 7, 2011). The students agreed with Student 7 that if they attended a R.A.V.E. Review without preparing that “you just kind of felt lost because it just moved so fast you were trying to write information down to go back and look up...you couldn’t keep up with the conversation” (lines 113 – 115, January 7, 2011). Students realized to get the most out of the R.A.V.E. Review sessions, coming prepared was necessary.

The next question not addressed in the results of this study was question seven “When thinking about the amount of time it took to prepare for the Child and Family Nursing class and exams, how, if at all, does it compare to your preparation in the other courses you have taken?” The answer to this question varied. In a one-on-one interview with Student 30, she commented “I would say prep was a lot more, it took longer” (line 144) while adding “Peds and OB are two of those specialties that may or may not come naturally to you and I was scared that it would not come naturally” (lines 125 – 126, June 17, 2010). During the focus group interview, Student 2 mentioned “I feel that the R.A.V.E. Reviews were significant even though it was like 2 hours you know I feel like it significantly reduced the amount of time I spent studying for the class” (lines 417 – 419) while adding “she can teach us and explain to us and make clear in 5 minutes what would

take me like 20 on my own” (lines 420 – 421, January 7, 2011). As noted from the responses to this question, they varied from studying less on their own to studying more.

The last questions of the interview included asking the participants if they would recommend the R.A.V.E. Review to other classmates and for other courses. Of the students interviewed, it was unanimous that they would recommend the R.A.V.E. Reviews to their classmates and recommend for other courses. However, Student 7 commented “But with R.A.V.E., it was always a week before the test so it gave you time to take the information in” (lines 813 – 814) while “a review 30 minutes before the test, if the teacher is asking the answer and you’re literally sitting there in your desk going ‘yeah, I’ve got nothing. I don’t know’” (lines 815- 817, January 7, 2011) while the other students agreed with this comment. This response suggested that timing may be a valuable consideration when planning reviews. Student 2 added “it is hard to say as to whether it would be beneficial because of different teaching styles”, and the students agreed with her. The information gleaned from these responses pertains to the timing and conduct of the Review sessions which will be discussed in chapter 5 under implications.

R.A.V.E. Review Attendance and Student Grades

Another finding was that all students who attended all five R.A.V.E. Reviews passed the Child and Family Nursing course. This accounted for 15% of the students included in this study. Nine percent of the students included in the study who did not attend all five R.A.V.E. Reviews did not successfully pass the course. To pass the course, students needed to receive a 76% or higher as an average for the exam scores before any assignments were included in the final grade. For instance, if a student

achieves a 75.8% average for the exam scores, the student did not pass the Child and Family Nursing course according to the policy within this College of Nursing. Passing with a 76% or higher as an average for the exam scores suggested these students successfully achieved the objectives in the Child and Family Nursing course.

Challenges

A few challenges arose during this study. One challenge was finding dates and times in which to conduct the R.A.V.E. Reviews that were acceptable for all students enrolled in Child and Family Nursing. However, after much debate, the students did agree on the dates and times which fit best in their schedules.

Another challenge was the comments from students stating that the information received during the R.A.V.E. Reviews differed from the information they received during class. I provided an explanation about how nursing has more than one acceptable answer. Emphasizing the importance of keeping an open mind, listening to others' perspectives, questioning information if it does not make sense, and utilizing resources was reiterated. Even though this was a challenge, the end result suggested transformation learning may have occurred. Toward the last two R.A.V.E. Reviews, the students debated with their colleagues more frequently; and overall, they seemed more inquisitive as evidenced by my observation and the observer's journal entry which is noted in the following example:

All students appeared very interested and the students were allowed to take notes once again. Students seemed confused over some of the material that was given. They confused some of the information received in class with what was given during

the review. They needed much clarification. Students asked many questions. Students were very intense for quite some time, and then got quiet. For the acid-base questions, the students seemed very confused. In general: the students seemed a little more frustrated (than previously).

(Journaling from observer, R.A.V.E. #3, March 12, 2010)

This confusion came from hearing information given in several ways and not said the same every time the information was given. I consistently encouraged questions and provided clarification and explained the importance of looking at the child from every angle and recognizing the many differences that can occur. The observer comments suggested the students made a smooth transition by this following journal entry:

The students went through questions and expanded on the information during discussion which appeared to be open, easy, and friendly. Vicky consistently tries to model for the students how to think about and reflect on previous information learned in other courses by bringing that information in to the discussion. She also models how to build on that information and formulate educated answers and solutions to questions

(Journaling from observer, R.A.V.E. #3, March 12, 2010)

Another challenge was that not all students perceived the R.A.V.E. Reviews as beneficial. Several students made the following comments in their journals:

- “Rave review somewhat help but didn’t help as much I thought” (Journal after Exam 4, line 6, April 16, 2010)
- “I am hoping the next reviews are more relevant to the exam” (Journal after Exam 2, line 11, October 18, 2010)
- “I liked the information on the RAVE review. I just hope that the material covered corresponds well with the test questions” (Journal after Exam 2, lines 12 – 13, October 18, 2010)
- “I attended review 3 but did not think it helped me answer the exam questions” (Journal after Exam 3, line 18, October 25, 2010)

These comments may have come from 3 or 4 students, but it is not known since journal entries were anonymous. So, returning to the primary research question “Does a reflective thinking process influence nursing students’ preparation for exams and achievement in a Child and Family Nursing course?”, the answer may lie in what students think they will receive during the R.A.V.E. Reviews. If they thought they were going to receive exam answers, they were disappointed. If they thought they were learning how to reflect on previous knowledge and information and apply it in different situations while being challenged with questions during the process, they found the R.A.V.E. Reviews beneficial.

Lastly, I did not know how many students attended all five R.A.V.E. Reviews or how many students did not attend any of the R.A.V.E. Reviews. This information could have supported the data collected from the students through journals, interviews, and the on-line questionnaire.

Chapter Summary

Chapter four provided the results of the data analysis through Grounded Theory. This analysis provided insight into the categories of facilitation of the learning process, value, and professional development which emerged from the data, while the subcategories that emerged were metacognition, participation and engagement, environment, methods used, recognizing strengths and weaknesses, bridging the gap from theory to practice, and linking self to the professional role. The data were obtained through the interviews, journals, and an on-line questionnaire. Throughout this chapter, student responses were used for each category and subcategory formed.

The findings suggested studying earlier, recognizing what they know and do not know, thinking at a deeper level, listening to their colleagues perspectives, and questioning information improved their performance on exams.

The challenges discussed included finding dates and times which fit in with all students' schedules, student frustration and confusion because of differing information from class to the R.A.V.E. Reviews, negative perceptions of the R.A.V.E. Review, and not knowing the exact number of participants who attended all the R.A.V.E. Reviews, or those students who did not attend any R.A.V.E. Review.

Chapter five will provide a summary of the study and discuss the findings suggested in this study in relationship to literature. In addition, conclusions, implications, and recommendations for future research will be addressed.

CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

In chapter 4, examples of how participants experienced the reflective thinking interventions in a Child and Family Nursing course were provided and analyzed. This chapter provides the following information: (a) a summary of the study, (b) conclusions, (c) implications, and (d) future research.

Summary of the Study

As the complexity of health care continues to grow and the responsibility of the nurse continues to expand, nursing students need to learn how to care for several complex clients at a time by prioritizing, delegating, applying knowledge from past experiences and textbook in a timely manner and yet providing safe, competent, and quality nursing care. The purpose of this research study was to explore the impact of a reflective thinking intervention that utilizes reflective thinking activities with nursing students. The primary research question was “how does a reflective thinking intervention affect nursing students’ preparation for exams and achievement in a Child and Family Nursing course?” Secondary questions are: how do reflective thinking activities impact the study habits of nursing students? What factors affect the learning environment during a reflective thinking intervention to make it conducive to learning? What changes, if any, do nursing students notice about themselves personally, professionally, and/or academically after participating in a reflective thinking intervention?

The literature review addressed study habits, adult learning, and reflective thinking. The population was senior-level nursing students in either the traditional or

accelerated BSN program at a college of nursing in a Midwest university during the Spring and Fall semesters of 2010.

The findings suggested studying early, recognizing what they know and do not know, thinking at a deeper level, listening to their colleagues perspectives, and questioning information improved their performance on exams. Another finding was that all students who attended all five R.A.V.E. Reviews passed the Child and Family Nursing course. This accounted for 15% of the students included in this study. Nine percent of the students included in the study who did not attend all five R.A.V.E. Reviews did not successfully pass the course. To pass the course, students needed to receive a 76% or higher as an average for the exam scores before any assignments were included in the final grade. For instance, if a student achieves a 75.8% average for the exam scores, the student did not pass the Child and Family Nursing course according to the policy within this College of Nursing. Passing with a 76% or higher as an average for the exam scores suggested these students successfully achieved the objectives in the Child and Family Nursing course.

Discussion

The students' comments regarding the R.A.V.E. Reviews suggested reflective thinking activities improved student performance and achievement in the Child and Family Nursing course. This section provides an interpretation of the findings.

For this study, facilitation of the learning process was described as the ability to impart that knowledge is not static and as the world continues to change, being inquisitive, curious, and adaptive to the change is the goal for students to attain (Rogers,

2002). Student thinking was an important component of the R.A.V.E. Reviews. With the complexity of nursing practice, allowing time for students to think about the appropriate solutions to situations is a key component in the creation of learning environments which are engaging and student-centered (Benner et al., 2010; Institute of Medicine, 2011). If students are expected to rely on memory, the thinking may be quick. However, if students are required to apply what they know to a real life situation, they need time to think about all pieces of information they are provided in order to make the best decision (Benner et al., 2010).

Even though rote memorization and recall are two of the more common techniques used by students (Watters & Watters, 2007) and techniques that are appropriate for surface learners (Entwistle, 2009; Watters & Watters, 2007), these techniques are not adequate when making connections from pieces of information and applying it to a real life situation (Entwistle, 2009). If students are required to take more responsibility in learning and reflecting on what they have learned in the past and are currently learning, the students show a deeper level of learning (Entwistle, 2009; Laird, Shoup, Kuh, & Schwarz, 2008).

Findings from this study suggest that allowing students time to read the question and/or information and giving them time to think and talk about the situation, they were able to solve the problems provided in a more contextualized approach. According to Benner et al. (2010), contextualization is critical for nursing students to develop and it is one of the many responsibilities of the teacher to emphasize. Nurses are considered the “front line” of a facility to ensure that safe and quality nursing care is provided (Institute

of Medicine, 2011, p. 23). During the R.A.V.E. Reviews, students recognized their strengths and weaknesses, and they realized the areas in which they were not as knowledgeable. Students frequently study the easiest items or the items they know more about before they study the more difficult items (Wasylikiw, Tomes, & Smith, 2008). However, after participating in the Reviews, they realized where their focus needed to be. Since the Reviews were always held at least one week before an exam, the students had time to study these areas of weakness frequently before the exam, while they also continued to review the information they already knew.

To enhance student learning, discussion is often used as a technique and creating a safe learning environment. Brophy (2010) and Chickering and Gamson (1987) indicated students who take an active part in learning, learn more than students who sit back and listen. One of the instructional techniques for student inclusion is the discussion. This was one of the techniques used during the R.A.V.E. Reviews. Discussions with colleagues is a reflective thinking strategy (Brookfield, 2005; Schon, 1987) used in nursing which is known to improve client care (Benner et al., 2010; Forneris & McAlpine, 2009; Plack & Greenberg, 2005). For a good discussion to take place, the environment has to be conducive to learning. A non-threatening environment was important for the participants in this study. A non-threatening environment manifests trust, respect, and patience (Boud, 1995; Magolda, 2000). Several students commented on how the environment was relaxed and open. The environment allowed them to not know everything, be relaxed, and consult a colleague or instructor, while never feeling intimidated or detested.

The environment, required for students to learn, needs to provide comfort, trust, respect, encouragement, support, positive feedback, care, and nurturance, and personalization to name a few factors ((Bain, 2004; Bevis & Watson, 2000; Brookfield, 2005; Brophy, 2010; Colin & Preciphs, 1991; Fraser, 2007). According to Knowles (1970), Dewey (1933), and Brophy (2010), a conducive learning environment is required for student learning to occur.

During the R.A.V.E. Reviews, a variety of reflective thinking activities were used. Participants referenced questioning, which included Socratic-style and multiple choice and pulling a topic from the basket and talking about the topic in detail, as the most useful methods. It was a fact that not only was one question asked, but the question was discussed in detail while more questions were asked. In addition to asking questions, participants revealed how talking about the answer choices and depicting the rationale for each choice, generated the solution to the question. Entwistle (2009) believed that dialogue and talking aloud can improve the connections students make between the information provided.

During the R.A.V.E. Reviews, students were encouraged to visualize a scenario and use their imagination. The students commented about how the R.A.V.E. Reviews “provides examples of how I should think” (R.A.V.E. Review #5, April 30, 2010) which is facilitated by the instructor. According to Candela and Bowles (2008), modeling how to think about situations demonstrates to students what they need to do to get to the solution.

The feeling of being valued was frequently noted from the students in this study. From the first time I saw the students, I knew they felt valued by the shock seen on their faces because I knew their names and greeted them as they walked into the Review. According to Brophy (2010), students develop a sense of belonging when they notice a teacher who is involved in knowing them and responding to them. He suggested the classroom needs to be a “learning community” (p. 22) which provides a place for students to learn and succeed by collaborating with the teacher and their colleagues while learning information that is worthwhile for them to know. Adults are motivated to learn when they know the information pertains to something of importance in their lives (Brophy, 2010; Tough, 1976), and they develop a plan in which to accomplish their goals. In addition, Brophy (2010) believed that characteristics such as a cheerful demeanor, friendliness, and enthusiasm have positive effects on the students’ motivation and learning.

Participants in this study indicated they were never put on the spot and any questions could be asked during the Reviews even if it was not part of the content being covered. Brophy (2010) believed that building a caring, supportive, and collaborative relationship between the teacher and colleagues would allow students to be comfortable asking questions, seeking clarification, and possibly stating the incorrect answers.

Additionally, congruence, unconditional positive regard, and empathy are three conditions Carl Rogers (1983) claims necessary for individuals to learn and develop. Participants in this study encountered the genuine, non-judgmental, and empathetic qualities I portrayed to them during the Reviews. This was evident by the statements

they made which included words such as “appreciate” and “thankful” while also recognizing that as the facilitator, I took “the extra step” for them (Focus group interview, student 7, lines 941 – 942, January 7, 2011). These statements captured that being a real person with a caring and non-judgmental attitude and empathy contributed to their freedom and opportunity to learn.

Benner et al. (2010) claimed “every class should contribute to their clinical imagination” (p. 79) and move away from the “encyclopedic approach” (p. 79). In order to provide powerful and effective learning, instructors must identify their own gaps in knowledge (Benner et al., 2010). They mentioned that educators need to learn new ways to teach in the classroom to meet the needs to the current students.

The connections students are required to make between theory and practice emerged from the data. Benner et al. (2010) claimed that educators feel as though they need to use the standardized PowerPoint slides provided and cover all the material students are required to know. The student responses in this study captured that the R.A.V.E. Review was a learning tool which allowed thinking through situations, using textbook and real life information, while also developing reasoning skills to understand what is actually occurring and the responsibility of the nurse in the situation. Benner et al. (2010) claimed that students need real life examples and stories and need to be an active participant if learning is to occur.

According to King and Kitchener’s Reflective Judgment Model and Benner’s Novice to Expert nursing model, individuals progress through the levels from minimal, if any, experience to many experiences. As individuals progress, changes occur. Just as

King and Kitchener (2005) explained, these individuals experience their lives being turned “upside down” (p. 105). Benner (1984) believed that nursing students and nurses progress through the stages of novice to expert with many challenges that are uncomfortable and have many feelings of uncertainty along the way. The participants in this study expressed feelings on uncertainty, frustration, and ambiguity. For instance, during R.A.V.E. Reviews 1 and 2, students were frequently frustrated by the variety of solutions or answers one situation could have. Not only did I observe this reaction, but also the etic observer noted this finding in her journal. The observer noted “The students seemed confused. They noticed the answers varied from what they heard in class. There were sidebar conversations being held.” (Observer Journal, R.A.V.E. #3, March 12, 2010). These students were experiencing a change in their assumptions and beliefs which provided frustration and uncertainty. Mezirow (1990) believed that reflecting on one’s own beliefs and assumptions and making changes provides learning that is transformational.

The participants in this study realized the responsibilities of being a nurse. They noted the importance of respect, lifelong learning, communication, open-mindedness, and questioning just as Benner et al. (2010) identified these components as necessary for the nursing profession. In addition, Benner et al. (2010) mentioned that teachers must create active learning opportunities for students to recognize what they know and what they do not know, how to make connections, and the care nurses are required to have in any situation given.

Limitations

Based on the fact that this study encompassed only one college of nursing in a Midwest university for two semesters in one course, Child and Family Nursing, multiple limitations arise. First of all, a larger sample size may have gleaned additional information. For example, a college of nursing who has a higher enrollment than 48 students per semester and/or partnering with another college of nursing who provides a Child and Family Nursing course would provide a larger sample size. The observations, interviews, journals and on-line questionnaire likely would result in a larger number of responses.

Secondly, this study was completed using only one nursing course which was a Child and Family Nursing course. It may also be appropriate to use reflective thinking interventions for other nursing courses or any other courses in which deep thought is required. Certainly, replication of this study may be done by other colleges of nursing or other colleges desiring to improve students' deep thinking and application of knowledge from the classroom and past experiences to real life situations.

Thirdly, the study was conducted during only two semesters in this Midwest College of Nursing. Conducting the study for more than two semesters with adding quantitative data, such as having students use numbers to identify themselves could provide important statistical information to compare with the qualitative data. The information collected during this study was anonymous and not as detailed as a mixed method approach may be.

Another limitation for this study was the low return rate of the on-line questionnaire. Once the students passed the course, many students did not check their email messages and the fact that the student had the information he/she needed, he/she knew he/she was not required to respond to the message.

The anonymity of the journals posed a positive in that the students knew the comments in which they wrote would not be traced back to the individual who wrote them. However, the anonymity produced a limitation in that it remains unknown how many, if any, of the individuals who did not pass the Child and Family Nursing course attended any of the R.A.V.E. Reviews.

Lastly, having the presence of an individual as an observer posed a limitation because the students realized an unknown individual was present. The students asked “why is there someone in here?” or “why are we being watched” during the first and second R.A.V.E. Reviews. Once the third R.A.V.E. Review occurred, students no longer asked the “why” questions about the unknown individual.

Conclusions

The purpose of this study was to explore the impact of a reflective thinking intervention that utilizes reflective thinking activities with nursing students. The primary research question was “does a reflective thinking intervention influence nursing students’ preparation for exams and achievement in a Child and Family Nursing course?” with secondary questions of “how do reflective thinking activities impact the study habits of nursing students? What factors affect the learning environment during a reflective thinking intervention to make it conducive to learning? What changes, if any, do nursing

students notice about themselves personally, professionally, and/or academically after participating in a reflective thinking intervention? The categories and subcategories which formed posed some interesting information for nursing education. This study was a journey for me and the participants. Not only did I complete the study, I learned more about nursing students and myself.

Frequent responses from the students resulted in the category facilitation of the learning process. The learning process for the participants was facilitated by allowing students time to think and to think at a deep level of thinking and understanding in a non-intimidating environment while valuing the students' participation and input. The students knew that attending the R.A.V.E. Reviews meant they were required to participate in whatever activity was used. If students were not thinking deep enough, they were challenged by my asking additional questions to promote deeper thinking. Benner et al. (2010) mentioned that there are multiple ways of learning, but students should be allowed time to think about the information provided so they can produce an answer or solution to the problems.

Providing students time to think about what they knew, their past experiences, assumptions, and beliefs, allowed them to develop deep thinking. Dickerson (2005) states "One of the best ways we can stimulate continued learning by licensed nurses is to provide them opportunities to reflect on the care they have provided and the clinical situations in which they have participated" (p. 72). What she was pointing out in this statement was to provide them time to reflect and see it as a necessary factor of improving care.

It appears that the R.A.V.E. Reviews provided students time to think which allowed them to think at a deeper level which may suggest one answer to the research question of “How does a reflective thinking intervention affect nursing students’ preparation for exams and achievement in the Child and Family Nursing course?”

Secondly, the findings suggest that participation from all students was necessary. Ensuring that all students participated during the Reviews was acknowledged positively by the comments from the students. As Brookfield (1999) mentioned that an important aspect to achieve students trust is to hold expectations the same for all students. Participants did not have an option to actively participate or not; everyone participated whether it was by answering questions or through small group discussions. This was an understanding by the students that if they attended the R.A.V.E. Reviews, everyone participated and contributed. Students who are actively involved in learning (Brophy, 2010; Chickering & Gamson, 1987) and held responsible for their learning, learn the information at a deeper level (Laird, Shoup, Kuh, & Schwarz, 2008). Again, this finding suggested another answer to the research question of “How does a reflective thinking intervention affect nursing students’ preparation for exams and achievement in the Child and Family Nursing course?”

For students to learn, the environment must be conducive to learning (Brophy, 2010; Dewey, 1933; & Knowles, 1970). The environment during the R.A.V.E. Reviews encouraged participation, respect, and openness while still questioning what the student was thinking. Brophy (2010) suggested building a learning community which he defined as “a place where students come primarily to learn and succeed in doing so through

collaboration with you and their classmates” (p. 22). A learning community emphasizes learning, which as Brophy stated, is “more than completing tasks or passing tests” (p. 22) and learning can be a collaborative process among the teacher and students. The R.A.V.E. Reviews may be used as a learning community (Brophy, 2010) since the Reviews required students to learn at a deep level and not for just passing tests; are seen as a collaborative, group intervention; and have an environment which is conducive for learning.

Since the most useful activities used during the R.A.V.E. Reviews were questioning, discussion, and talking out loud to hear the information again, students learned the importance of past knowledge, experiences, and perspectives. These activities have been used to promote reflective thinking in nurses (Barrington & Campbell, 2008; Forneris & McAlpine, 2009; Ireland, 2008; Lasater, 2007; Plack & Greenberg, 2005; Platzer, Blake, & Ashford, 2000; Teekman, 2000) to enhance nursing care. These strategies, used by nurses, have been found to improve client care in the hospital setting as noted by the aforementioned authors.

Brockbank and McGill (2007) mention the use of questioning as a technique to “enable students to learn and develop, to reflect upon their actions, generate their own plans, and implement their own solutions” (p. 261). In addition to the questioning, the students are free to explore, share, and work together actively. These activities assisted students in identifying their strengths and weaknesses in knowledge, becoming more open and self-confident, and demonstrating an increase in questioning to peers and instructor. Students challenged information more frequently, were able to visualize a real

situation, and to think through the situation in a step-by-step manner. Schaefer (2002) claimed that using reflective techniques allows students to take a second look at a situation which enhances their learning.

Benner et al. (2010) suggested that faculty use innovative methods to promote clinical reasoning. They added that “reflection is when they deconstruct situations of practice” (p. 84) and ask questions until clarification and understanding are met. This deconstruction of situations occurred consistently at the R.A.V.E. Reviews through real life scenarios and discussions, with the instructor present to provide feedback, stimulating questions, and clarification. Providing feedback immediately (Benner et al., 2010; Phillips, 2005; Rothblum, Kniest, & Caputi, 2009; Tanner, 2006) during any of the Review sessions is an important component. In providing this feedback, my first attempt was to ask several questions to lead the student to think about other factors in the situation. Benner et al. (2010) believed providing immediate feedback assisted students in putting the pieces together from classroom and real life situations. Allowing students to share information allowed multiple perspectives of a similar situation to be addressed, even though some nursing interventions may be different. This allowed students to realize there is more than one way to provide competent nursing care. Benner et al. (2010) mentioned that these strategies help to decrease errors from occurring over and over, improve communication, and provide competent and safe client care.

Lastly, reflecting on King and Kitchener’s Reflective Judgment Model and Benner’s Novice to Expert Model, nursing students began participating in the R.A.V.E. Reviews according to the first stage of King and Kitchener’s Reflective Judgment Model

and Benner's Novice to Expert Model. The students wanted the information given to them. However, during the R.A.V.E. Reviews, this did not occur. Instead, I role modeled how to put the information together and coached and guided them through some situations until they realized what they needed to do to make the connections. The students began as novices or in the prereflective level, but as the semester continued and they participated in more R.A.V.E. Reviews, they began to challenge information, see other perspectives as possibilities, and realize the answers may not always be the same. Mezirow (2000) mentioned transformational learning takes place after a situation that makes one uncertain or unsure of what to do next; the students who participated in the R.A.V.E. Reviews felt this challenge as evidenced by Student 3 in the focus group interview stated "yeah, it doesn't feel like you know anything". However, after attending all five R.A.V.E. Reviews this same student commented "This information is so stuck in your head, it'll trigger something in your mind, whether it was a story or example, it will be there and I will be a stronger nurse because of it" (Focus group interview, lines 735 – 736). As the students progressed through the R.A.V.E. Reviews, they improved on questioning, problem solving, and prioritizing while feeling more comfortable with the transition in learning.

Implications

The findings in this study may benefit undergraduate and graduate nursing faculty and students; hospital administrators, managers, and educators; and other disciplines in which students are required to make connections between what is taught in the classroom and what needs to be done in the clinical setting. In addition, faculty who use reflective

thinking journals as a learning method may find using the R.A.V.E. Reviews as another teaching strategy to get students involved in their learning while receiving immediate feedback. A reflective thinking intervention may also be helpful in any adult education course in which the instructor provides higher level thinking questions via exams to measure student learning. It may be the step that stimulates students to think about situations in real life versus focusing only on textbook information.

Since students need more connections between theory and the clinical experiences (Benner et al., 2010), the student responses from this study suggested that the R.A.V.E. Review allowed them to make connections and to see the big picture. With the literature and the findings in this study, it is possible that R.A.V.E. Reviews could serve as a step to bridge the gap between the classroom and the clinical experience. For students to think reflectively, they need the basic information before expecting to solve problems or reason about complex client situations. Throughout the R.A.V.E. Reviews, past knowledge and experiences consistently arose and promoted student learning. If the basic information can be learned by the students studying before attending class and in the classroom, the R.A.V.E. Review may be the step toward the bridge that transitions the students from classroom to clinical in a smooth, fun, and, yet, challenging manner.

Forneris and McAlpine (2007) claimed that nursing education should focus on challenging students' perceptions and encouraging student questioning to narrow the gap between theory and practice. Ireland (2008) referenced reflective thinking as a key component to mindful practice and nursing education. She mentioned that it can become a "habit of mind" (p. 90) and allow the nurse to use familiar information in unfamiliar

situations by reflecting on past knowledge and experiences. She also addressed how evidenced based nursing (EBN) “fosters reflection on practice” and since EBN is how many facilities write the standards of care and protocols, the factor of reflection becomes an even more profound necessity.

With the changes noted in the students’ learning, I find this discovery to illustrate the necessity for using a reflective thinking intervention, such as the R.A.V.E. Review, during nursing school as a step to bridge the gap between theory and practice. One participant stated “I would LOVE that they offer some kind of review but it would have to be a focused review with stories and examples” (Focus group interview, student #3, lines, 839 – 840, January 7, 2011), a Review, such as the ones completed for this study, could be beneficial. Providing stories and having students visualize real life situations stimulated their minds to think at a deeper level.

A response from another participant which demonstrates frustration was “we have teachers that did like 30 minutes (of review) before the test” and “But when you do a review 30 minutes before the test, if the teacher is asking the answer and you’re literally sitting there in your desk going ‘yeah, I’ve got nothing. I don’t know’” (Focus group interview, student #7, lines 813, 815 – 816, January 7, 2011). This review only frustrated and confused students as also noted by Student 99 “All we needed to remember were the ‘key’ words the teachers gave to us before the exam. They were always part of the correct answer” (Interview, lines 208 – 209, July 1, 2010). These responses suggested that the student did not know that particular information mentioned by the teacher or would need to remember only the key words mentioned by the teacher to obtain the

correct answers to exam questions. This response informed me that students were again counting on recall and memorization just as Watters and Watters (2007) claimed.

If faculty consistently use reflective thinking activities to promote student learning, as the study findings suggested, the ability of students to make decisions and problem solve in order to think like a nurse and attain a deeper level of thinking is possible. To designate a specific course or an inter-session, meaning between semesters, course to reflective thinking and its development and application, may be the next step needed for students to achieve the reasoning skills necessary for today's ever changing health care.

As nurses are expected to care for more complex clients and must be able to use information from a variety of areas and apply the information to each client's situation, R.A.V.E. Reviews may be the much needed the bridge for students to cross from the classroom to clinical practice.

Recommendations for Future Research

The first recommendation would be to conduct follow-up interviews with the participants of this study once they have spent time in the workplace to capture the impact the reflective thinking intervention had on their transition from a nursing student to a bedside nurse. Forneris and McAlpine (2009) claimed that nurses who practice reflective thinking, think at higher levels, prioritize and organize effectively, and intervene with safe, competent, and quality decisions, it may be beneficial to interview the participants of all five R.A.V.E. Reviews to address the transition from student nurse to graduate nurse.

Replicating this study in another college of nursing which offers a Child and Family Nursing course may glean additional information to support the findings in this study. In addition, expanding the study to include more ethnic groups and more male individuals may result in additional findings to further decrease the gap between theory and clinical practice.

Another recommendation would be to collect quantitative data in which a control group and an experimental group are used. This data could identify the statistical relevance of attending R.A.V.E. Reviews and achieving in a Child and Family Nursing course. This may provide richer, more detailed information and enhance the current findings.

Just as nurses are responsible to provide complex care to a variety of patients, other disciplines, such as sociology, psychology, optometry, or any other discipline which requires students to pass high level thinking questions, may want to replicate this study. The R.A.V.E. Review may be the step to bridge the gap between theory and the clinical aspect. Since it appeared that the R.A.V.E. Reviews enhanced the way students thought about information to prioritize, make decisions, and solve problems; educators should be facilitating questioning, discussion, and talking out loud to encourage reflective thinking. It may be the guidance, coaching, and encouragement the students need to begin thinking outside the box and see the whole picture.

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Appendix A

This activity is your Ticket to R.A.V.E. Review # 2. Please complete it before attending. The facilitator will collect the ticket for admission to the event.

See you there!

PEDIATRIC RESPIRATORY DISORDERS

FILL-IN-THE-MISSING INFORMATION

Asthma

Develop a plan of care, from assessment through evaluation, for a child who has been admitted to the emergency department with an acute episode of asthma.

What is asthma?

Assessment: General

- a. Wheezing episodes
- b.
- c.
- d.
- e.

Assessment: Acute episode

- a. Initial irritability, restlessness, headache, fatigue, and chest tightness
- b.
- c.
- d.
- e.
- f.
- g. Diaphoresis
- h.
- i.
- j.
- k.
- l.
- m.
- n.
- o.

p.

q.

Interventions: Acute episode

a. Assess and maintain airway patency.

b.

c.

1. Short-acting β_2 agonists, such as albuterol, epinephrine

2.

3.

d.

1.

e.

f.

g. Obtain chest x-ray as prescribed.

h

Interventions: Other

a. Long-term (preventer) medications

1.

2.

3.

4.

5.

6. Nebulizers, metered-dose inhalers (MDI), and peak expiratory flowmeter

b. Instruct child and parents on proper use of nebulizer, inhaler as prescribed.

1.

2.

c. *Allergen control*

1.

2.

d.

1.

2. Avoid extreme temperature changes

3.

4.

5.

6.

- 7.
 - 8.
 9. Encourage child to take control of self-care measures
- e. Other teaching required
- 1.

Appendix B

DEMOGRAPHIC INFORMATION OF PARTICIPANTS IN THE REFLECTIVE THINKING STUDY

BY VICKY H. BECHERER, MSN, RN

GENDER: _____

AGE: _____

ETHNICITY: _____

CURRENTLY EMPLOYED (circle one): **YES** **NO**

JOB TITLE: _____

HOURS WORKED PER WEEK (circle one):

less than 10 10 – 20 21 – 30 31 – 40 more than 40

HIGHEST LEVEL OF EDUCATION COMPLETED TO DATE (circle one):

High school Associate's degree Bachelor's Master's
Other (please state): _____

IDENTIFY AREA OF DEGREE: _____