THE USE OF REFLECTION AND INQUIRY IN AN ONLINE
CLINICAL POST-CONFERENCE

A dissertation submitted to the
Kent State University College
of Education, Health, and Human Services
in partial fulfillment of the requirements
for the degree of Doctor of Philosophy

By
Karen A. Zapko
December 2013
A dissertation written by

Karen A. Zapko

A.A.S., Youngstown State University, 1976
B.S.N., Youngstown State University, 1982
M.S.N., Kent State University, 1995
Ph.D., Kent State University, 2013

Approved by

____________________________, Co-director, Doctoral Dissertation Committee
William P. Bintz

____________________________, Co-director, Doctoral Dissertation Committee
Teresa J. Rishel

____________________________, Member, Doctoral Dissertation Committee
Albert Ingram

Accepted by

____________________________, Director, School of Teaching, Learning and Curriculum Services
Alexa Sandmann

____________________________, Dean, College of Education, Health, and Human Services
Daniel F. Mahony
An important goal of nursing education is to produce graduates who are problem solvers and competent clinical practitioners able to practice in a very complicated health care environment; reflection and inquiry are two ways to accomplish this goal. This qualitative study explored how eight senior baccalaureate nursing students developed in their ability to utilize reflection and inquiry at higher stages over time through the use of the online clinical post-conference conducted as an asynchronous discussion board. Transcripts of participant postings were examined weekly to determine the stage of reflection and inquiry displayed and a comparison was done to determine if the stages increased over time. Boud’s model of the reflective process and the practical inquiry model of Garrison, Anderson, and Archer provided the theoretical framework for this study.

Findings from this study demonstrated that participants developed in their ability to utilize reflection and inquiry at higher stages over time by engaging in the online clinical post-conference and that the online clinical post-conference was an effective venue that encouraged the use of reflection and inquiry. The social aspect of the online clinical post-conference (reading others’ posts, having others read and comment on their posts, and asking each other questions) was seen as promoting learning from peers.
Findings of this study could be used by nurse educators to change their pedagogy to produce nurses who learn from experiences and are lifelong learners. Nurse faculty should consider incorporating the use of reflection, inquiry, and the online clinical post-conference in all clinical courses.
ACKNOWLEDGMENTS

I would first like to thank my dissertation chairs Dr. Teresa Rishel and Dr. William Bintz for providing me with guidance and support. Without your knowledge and insight, I would not have made it through this long and arduous journey. Thanks to Dr. Rishel for your unfailing support and advice and for your tireless and excellent editing and to Dr. Bintz for sharing your research expertise and for insisting on clarity in this study and this document. I would also like to thank the third member of my committee, Dr. Albert Ingram, for providing another viewpoint and for sharing your knowledge of online learning. A special thanks to my editor, Sharon Smith, for your advice and expertise.

To my Salem campus colleagues, you were always a source of friendship, encouragement, and support. You willingly offered assistance whenever I needed it and I truly appreciate it.

A very, very special thanks to my husband, Richard. I dedicate this dissertation to you. Through this long and difficult process, you always stood by me, encouraged me, and made life less stressful. You cooked dinner or took me out to dinner, took over the laundry and performed other household chores, listened to me vent, and kept me sane. Your insight was and is always invaluable to me. Throughout this journey, you shared the good times and the bad, and I truly could not have accomplished this dissertation without your love and support. I love you.

To my children, Amanda and Daniel, you always believed in me even when I had doubts. You offered love, understanding, and steadfast support. You are both such
awesome people and I am so proud of you. To Patrick, my “other” child, thank you also for your assistance, understanding, and support during this long process and for not thinking that your mother-in-law was crazy for attempting this journey. And, finally, a very special thanks to my wonderful new grandson, Nathaniel. You kept Grandma sane during this process by smiling, playing, and being altogether adorable, all of which helped me work harder to finish so that we could have more time to play.
# TABLE OF CONTENTS

## ACKNOWLEDGMENTS

iv

## LIST OF TABLES

x

## CHAPTER

### I. INTRODUCTION

1. Background of the Problem                               1
   - Helping Students to Learn From Clinical Experiences       1
   - The Use of Reflection in Nursing                           3
   - How Inquiry is Used in Nursing Education                  8
2. Problem Statement                                         10
3. Purpose of the Study                                      11
4. Professional Significance of the Study                    12
5. Assumptions and Limitations                               14
6. Definitions of Key Terms                                   15

### II. REVIEW OF THE LITERATURE

1. Reflection                                                  17
   - Reflection as an Active Process                           19
   - Reflection as Part of Professional Practice               20
   - Reflection-on-action                                      21
   - Reflection-in-action                                      22
   - The Importance of Reflection in Nursing Education          24
2. Reflection in Nursing Research                              25
3. Methods Used to Encourage the Development of Reflection    27
4. Inquiry                                                    29
   - Inquiry as a Method of Problem Solving                    30
   - Models of Using Inquiry in Education                      32
   - Inquiry in Online Environments                            33
   - The Importance of Student Questions in Learning How to Learn 36
   - The Use of Inquiry in Motivating Students                 38
5. Clinical Post-Conference                                   40
   - Benefits to Learning Provided by the Clinical Conference   40
   - The Online Clinical Post-Conference                       43
   - Benefits of Using Online Venues to Enhance Learning       43
   - Student Satisfaction With Online Venues in Nursing Classes 45
   - The Online Clinical Post-Conference as an Asynchronous Discussion Board                                      45
   - Advantages of the Asynchronous Discussion Board           46
III. METHODOLOGY

Overview of Data Analysis

Data Collection Procedures

Study Procedures

Data Collection Procedures

Use of written communication
Convenience, flexibility, and control
Development of higher level thinking
Promotion of collaborative learning

Use of the Asynchronous Discussion Board in Clinical Nursing

Classes

Summary

III. METHODOLOGY

Theoretical Framework
Qualitative Research
The Basic Descriptive Interpretive Qualitative Approach
Other Approaches to Qualitative Research Not Selected

Phenomenology
Grounded theory
Case study
Ethnography
Narrative analysis

Model of the Reflective Process
Practical Inquiry Model

Design of the Study

Research Site
Selection of Participants
Recruitment Procedures
Sample Demographics
Risk to Participants
Sources of Data
Artifacts
Participant Interviews
Research Memos

Use of the Asynchronous Discussion Board in Clinical Nursing

Classes

Summary
IV. ANALYSIS OF THE FINDINGS .................................................................94

Analysis of Development of Reflection ..................................................95
Stage 1: Returning to Experience .........................................................95
Stage 2: Attending to Feelings .............................................................99
  Using positive feelings .................................................................100
  Overcoming obstructive feelings .....................................................102
Stage 3: Association ...........................................................................109
Stage 4: Integration ............................................................................110
Stage 5: Validation ..............................................................................112
Stage 6: Appropriation .......................................................................113
Stage 7: Outcome of Reflection .........................................................115
Development of Reflection Over Time ..................................................117
  Nursing of the Critically Ill course .................................................117
  Comparing stages of reflections week one and week six .......... 119
  Nursing Leadership and Management Course .........................121
  Comparing stages of reflections week seven and week twelve . 122
  Development of reflection from beginning of study to the end . 124
Summary of the Development of Reflection ........................................125

Analysis of Development of Inquiry ....................................................126
Stages of Inquiry (Practical Inquiry Model) Displayed by Participants ..126
  State of dissonance .................................................................128
  Exploration .................................................................................129
  Integration ..................................................................................132
  Resolution ..................................................................................133
Development of Inquiry Displayed by Participants ............................135
  Nursing the Critically Ill Course ...............................................135
  Comparing stages of inquiry week one and week six .......... 137
  Nursing Leadership and Management Course .........................138
  Comparing stages of inquiry week seven and week 12 .......... 139
  Development of inquiry from beginning of study to the end .... 141
Summary of the Development of Inquiry ............................................142
The Online Clinical Post-Conference, Reflection, and Inquiry ..........143
Comparing Participant Views of Online Clinical Post-Conferences With ...
Face-to-Face Post-Conferences ......................................................146
  Face-to-Face Clinical Post-Conferences ........................................147
  Online Clinical Post-Conferences ...............................................147
Summary .........................................................................................149
V. DISCUSSION OF FINDINGS AND IMPLICATIONS ........................................ 150

Discussion of the Findings ................................................................................ 150

Reflection ............................................................................................................. 150

Increase in stages of reflection ........................................................................ 151

Veronica’s Journey—a dramatic improvement .............................................. 153

Inquiry .................................................................................................................. 156

Improvement in stages of inquiry displayed ................................................. 157

Weeks of asking no questions or decreased stages of inquiry ................. 160

The Effect of the Online Clinical Post-Conference on Reflection and Inquiry .......................................................... 161

Time to think, reflect, and inquire ................................................................. 162

Writing thoughts and ideas .............................................................................. 162

Having others read posts .................................................................................. 165

Reading others’ posts ....................................................................................... 165

Social aspect of reflecting and inquiring in the online clinical post-conference .......................................................... 166

Implications for Nursing Education ................................................................ 170

Reflection and Inquiry and Lifelong Learning .............................................. 171

Fostering Inquiry as the Foundation of Evidence-Based Practice ............ 173

Incorporating Reflection and Inquiry Using the Online Clinical Post-Conference .................................................................................. 175

Other Benefits of the Online Clinical Post-Conference ................................ 176

Further Implications and Questions ............................................................... 177

Recommendations for Further Research ...................................................... 178

Conclusion ......................................................................................................... 181

APPENDICES ................................................................................................... 183

APPENDIX A. INITIAL EMAIL SEEKING STUDY PARTICIPANTS ............. 184

APPENDIX B. INFORMED CONSENT TO PARTICIPATE IN RESEARCH STUDY .................................................................................. 186

APPENDIX C. DEMOGRAPHIC DATA SHEET ................................................. 191

APPENDIX D. ONLINE CLINICAL POST-CONFERENCE GUIDELINES .................................................................................. 193

APPENDIX E. QUESTIONS FOR THE FIRST INTERVIEW ......................... 196

APPENDIX F. QUESTIONS FOR THE SECOND INTERVIEW ..................... 198

APPENDIX G. CLASS HANDOUTS (INFORMATION GIVEN TO STUDENTS IN CLASS) .................................................................................. 200

REFERENCES .................................................................................................. 204
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Descriptive Characteristics of Participants</td>
<td>71</td>
</tr>
<tr>
<td>2. Timeline for Data Collection and Description of the Data Set</td>
<td>79</td>
</tr>
<tr>
<td>3. When Participants Were Interviewed</td>
<td>82</td>
</tr>
<tr>
<td>4. Stages of the Model of the Reflective Process</td>
<td>88</td>
</tr>
<tr>
<td>5. Stages of the Practical Inquiry Model</td>
<td>89</td>
</tr>
<tr>
<td>6. Elements/Stages of Reflection Exhibited by Participants</td>
<td>96</td>
</tr>
<tr>
<td>7. Stages of Reflection Evidenced Weekly by Participants—Nursing the Critically Ill Course</td>
<td>118</td>
</tr>
<tr>
<td>8. Numbers of Participants in Each Stage of the Reflective Process Week 1 and Week 6—Nursing the Critically Ill Course—8 Participants</td>
<td>119</td>
</tr>
<tr>
<td>9. Stages of Reflection Evidenced by Participants—Nursing Leadership and Management</td>
<td>122</td>
</tr>
<tr>
<td>10. Numbers of Participants in Each Stage of the Reflective Process Week 7 and Week 12—Nursing Leadership and Management Course—5 Participants</td>
<td>123</td>
</tr>
<tr>
<td>11. Stages of the Practical Inquiry Model Displayed by Participants</td>
<td>127</td>
</tr>
<tr>
<td>12. Stages of Inquiry Evidenced by Participants Weekly—Nursing the Critically Ill Course</td>
<td>136</td>
</tr>
<tr>
<td>13. Numbers of Participants Placed in Each Stage of the Practical Inquiry Model—Nursing the Critically Ill Course—8 Participants</td>
<td>137</td>
</tr>
<tr>
<td>14. Stages of Inquiry Evidenced by Participants Weekly—Nursing Leadership and Management Course—5 Participants</td>
<td>139</td>
</tr>
<tr>
<td>15. Numbers of Participants Placed in Each Stage of the Practical Inquiry Model—Nursing Leadership and Management Course—5 Participants</td>
<td>140</td>
</tr>
</tbody>
</table>
16. Veronica’s Stages of Reflection Each Week ........................................153

17. Stages of Inquiry Evidenced by Participants Weekly..........................158
CHAPTER I
INTRODUCTION

Nursing is a professional discipline and a clinical field of practice. An important goal of nursing education is to produce graduates who are critical thinkers, problem solvers, and competent clinical practitioners able to practice in a very complicated health care environment. To this end, reflection and inquiry are the means by which people learn (Boud, Keogh, & Walker, 1985; Furberg, 2009), can be utilized to enhance the clinical education of nursing students (Cleverly, 2003) and, ultimately, improve the practice of nursing.

This qualitative study investigated the use of reflection and inquiry in nursing education and sought to discover how participants developed in their ability to use reflection at higher stages and how participants developed in their ability to engage in inquiry at higher stages through the use of the online clinical post-conference. The study used the online clinical post-conference—in the format of an asynchronous discussion board—as the venue for participants to display reflection and inquiry.

This chapter provides the background of the problem addressed by the study, describes the problem statement, lists the purpose of the study, and outlines the professional significance of the study. The chapter concludes by noting the assumptions and limitations and defining terms used in the study.

Background of the Problem

Because nursing is a clinical field and its graduates must be prepared to function competently in clinical practice, a large part of all nursing education programs is the
practice, or clinical component. Nursing students learn by doing; they gain knowledge by providing care and making decisions for actual patients under the direct supervision of their instructors. A nursing clinical experience occurs when students practice in a hospital or other healthcare facility and, under the direct supervision of their instructor, provide nursing care to patients; students have direct contact with patients for the purpose of increasing nursing knowledge (Addis & Karadag, 2003), applying the knowledge that was learned in the classroom, testing theories, and acquiring skills (Gaberson & Oermann, 2010). Theoretical concepts learned in the classroom become real to students as they are able to deliver nursing care to patients who exhibit the problems discussed in class. In addition, encountering real-life situations in practice allows students to analyze, evaluate, modify, and apply what they have learned and to progress in their thinking from the lower-level activities of knowledge and comprehension to the higher level activities of analysis, synthesis, and evaluation (Dunfee, Rindflesch, Driscoll, Hollman, & Plack, 2008).

Clinical experiences are an important part of nursing education because they allow students to apply therapeutic communication strategies on patients and other health professionals and to develop a professional identity (American Association of Colleges of Nursing [AACN], 2008). Clinical experiences take place in the very fast-paced environment of this nation’s health care facilities, therefore clinical teaching is a complicated process (Dyches, 1998).

Innovative ways of ensuring that nursing students learn from clinical experiences are needed in order to produce graduates who are competent practitioners and life-long learners. Lifelong learning is especially important for nursing students because it is
impossible for students to learn in four years the correct answers to every one of the infinitely many potential situations that they might encounter in professional practice and to gain all the knowledge that they would need to practice for the rest of their careers. In addition, it is impossible for nursing education programs to anticipate and include in their curricula all the changes that are likely to occur in the future (Cheek & Doskatsch, 1998).

Most of the problems and situations that confront professional nurses in practice are not neat, tidy, and solvable by the rote theories and situations learned in nursing school. These problems, which Schön (1987) called “messy, indeterminate situations” (p. 4), are unique in nature. Nursing students often struggle when told by their instructors that the correct action ‘depends on the situation.’

The health care field is changing so rapidly that the estimate of the half-life of nursing knowledge is between three and four years. This means that half of all the knowledge students learn in nursing school will become obsolete in three to four years (American Nurses Association [ANA], 2011). Therefore, it is imperative that nursing students should “acquire the skill of learning how to learn and the motivation to continue to do so” (Cleverly, 2003, p. 829). The nursing profession expects that students be responsible for their own learning and must continue to learn even after graduation and licensure. In addition to teaching core nursing knowledge, nursing education programs must provide their graduates with the means of becoming life-long learners.

**Helping Students to Learn From Clinical Experiences**

A pedagogical tool that is universally used to assist nursing students to learn from their clinical experiences is the clinical post-conference. Clinical post-conferences provide
nursing students the opportunity to communicate with the instructor and with other students in the group about difficulties they encountered on the clinical unit (Oermann, 2008). In addition, clinical post-conferences encourage students to develop much-needed critical thinking skills and to learn how to work together with others in a group (Gaberson & Oermann, 2010). For appropriate, relevant learning to occur in clinical post-conferences, nurse educators must find ways to promote critically reflective thinking and to devise a learner-driven dialogue that is participatory and interactive (Mezirow, 1998). This means that student participation should be encouraged, even required, so that students can get their questions answered and faculty can assess how much students have learned.

Difficulties have arisen in recent years with holding the clinical post-conference in a face-to-face manner. The problem with face-to-face clinical post-conferences is that, traditionally, they are held at the end of a long clinical day in which students have spent eight to 10 hours caring for patients. Today, students are caring for patients with increasing levels of acuity and often have problems completing their patient care assignments in time to attend post-conference (Yehle & Royal, 2010). Student engagement in the clinical post-conferences is often less than what is desired due to fatigue and other life demands on students at this time (Cooper, Taft, & Thelen, 2004). At the end of a long clinical experience, students are often mentally and physically exhausted and focused on nothing more than simply getting home. More importantly, since students have not yet had time to process and reflect on the happenings of the clinical day, they are passive learners and their participation in the clinical conference is often quite limited and superficial (Cooper et al., 2004; Donner, Levonian, & Slutsky, 2005). Immediately after the clinical experience is not
usually the best time to ask students to reflect and to share their thoughts and feelings (Cooper et al., 2004; Donner et al., 2005).

Nurse educators are therefore faced with the task of developing alternate formats for the clinical post-conference to enhance student response and student learning. One of these alternate formats is the online clinical post-conference, which is conducted using Web-based technology. Communicating via the Internet is a vital part of the world today and is changing the way people teach and learn (Adams, 2004). In an effort to provide time for reflection, to encourage greater student engagement, and to overcome the effects of fatigue, the researcher in this study decided to use available Web-based technology to develop an online clinical post-conference in an asynchronous discussion board format. Using Web-based technology, participants could contribute to the online clinical post-conference after they have had time to reflect on their experiences and when they were rested.

**The Use of Reflection in Nursing**

Experience is said to be the best teacher (Dewey, 1938; Schön, 1983, 1987). However, experience alone does not lead to learning; reflection on experience is crucial (Brookfield, 1998, Dewey, 1938; Loughran, 2002; Schön, 1987). The idea that reflection is an important way to learn from experience was introduced over a century ago and continues to be an important issue in professional discourse (Ash & Clayton, 2004; Chong, 2009). In 1910, Dewey offered his first description of reflection stating that reflection is a conscious and voluntary process that consists of controlled, focused thought and that reflective thought is the “active, persistent and careful consideration of any belief or
supposed form of knowledge in light of the grounds that support it, and the further conclusions to which it tends” (p. 6).

Seventy years later, the concept of reflection was still being explored in the literature as Schön (1983) presented his definition of reflection as a constant process that connects thinking and doing. Schön (1987) also described reflection as a way to learn and he introduced the term “reflective practitioner” to describe an epistemology of practice that took into account the knowledge that is learned in experiencing professional practice.

Because nursing is a clinical field, the clinical experiences that students have are a valuable and necessary part of their learning. The idea that professionals use reflection to learn from experience is valuable for nursing education because nurse faculty, in order to prepare nursing students for the demands of professional nursing practice, can teach students how to reflect and can incorporate reflection into clinical nursing education.

Reflection is particularly important to nursing education because it allows students to develop the skills that will help them to learn from their experiences and to keep learning as they continue to practice nursing. Reflection is a method of developing nurses’ knowledge to meet patients’ needs and of developing critical thinking (Burton, 2000). Reflection bridges the gap between theory and practice and enables the creation of nursing knowledge from practice (Burton, 2000; Duke & Appleton, 2000; Hsu, 2007). When engaging in the process of reflection, students attempt to make sense of their current experiences based on their past experiences and their current knowledge. For example, when faced with a dilemma of patient care, a nurse can reflect to recognize similarities in the present situation to situations previously encountered and to identify what worked in
those past situations. Reflection also enables students to challenge beliefs, to change values (Green, 2002), and to explore judgments and clinical decisions that have been acted on in previous practice (Mantsoukas & Jasper, 2004).

Encountering real-life situations in practice allows students to analyze, evaluate, modify, and apply what they learned in the classroom. Thus, reflection encourages a progression in thinking from lower-level activities of knowledge and comprehension to higher-level activities of analysis, synthesis, and evaluation (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956; Dunfee et al., 2008). The progression to higher levels of thinking is extremely beneficial for the competent functioning of nurses today. Reflection, therefore, when used in clinical nursing courses, encourages students to investigate insights into their practice and encourages the growth of competence (Daroszewski, Kinser, & Lloyd, 2004).

Reflection is commonly used in nursing education. Nursing students are often told to write about their experiences in a reflective journal. Unfortunately, most of the time, that is the extent of the instruction students receive; no model or framework is given to students to provide guidance as to what constitutes reflection and how to construct their reflections (Sherwood & Horton-Deutsch, 2012). Many nursing faculty do not understand how to evaluate the level of students’ reflections (Johns & Freshwater, 2005). Critics of the use of reflection say that reflection needs to be a clearer process so that it leads to new awareness and insights that can lead to behavior change (Price, 2005; Sherwood & Horton-Deutsch, 2012). This study sought to determine what stages of reflection participants displayed in the postings to the online clinical post-conference and if those stages increased over time.
How Inquiry is Used in Nursing Education

In addition to reflection, inquiry is also seen as a way that people learn from their experiences (Furberg, 2009). Inquiry is the process of asking questions and, therefore, is the way people learn when they ask questions (Sandoval, 2005). The process of inquiry is particularly meaningful because, in utilizing inquiry, students ask and seek answers to their own questions. They inquire about topics that are especially interesting to them (Dewey, 1933).

The ability of nurses to identify, ask, and answer appropriate clinical questions is an essential requirement of ensuring an evidence-based profession (Mick, 2011) and is an important part of nursing education. Profetto-McGrath, Smith, Day, and Yonge (2004) stated that inquiry is “an active process whereby individuals can reach sound decisions by critically challenging what they hear, see, read, and experience” (p. 364). Students who utilize inquiry at high stages develop strategies to answer the questions they ask by generating data, analyzing the data, and drawing conclusions from the data (Sandoval, 2005). Inquiry, therefore, is the process of asking the right questions and then going about the business of seeking answers to those questions. By using an inquiry-oriented approach to learning, nursing students learn to ask the right questions and become capable of finding the answers to the puzzling questions that occur in professional practice (Schön, 1987).

The right questions are those that promote thinking at the higher cognitive levels of analysis, synthesis, and evaluation (Myrick & Cpsych, 2002) and lead to the development of a new understanding (Spencer, 2005). The right questions are questions that require learners to go beneath the surface and to deal with complexity (Elder & Paul, 1998).
Determining the right questions to ask is essential to the development of critical thinking, creativity, and higher-level thinking, all of which are beneficial in the education of student nurses (Hsu, 2007).

In the traditional approach to education, teachers and others in authority prescribe what is to be learned and how. Teachers lecture and otherwise provide information, and students learn what is presented to them (Pardales & Girod, 2006). In an inquiry approach to education, students and teacher together ask about and study topics that are of shared interest to them. An inquiry approach stipulates that student interest and the answering of questions are used to structure dialogue and to seek knowledge (Pardales & Girod, 2006).

Asking questions, like reflection, is a commonly used strategy in nursing education. Questioning is a teaching strategy that is used to facilitate learning and to develop critical thinking skills, decision making, and problem solving in students (Phillips & Duke, 2001; Sellappah, Hussey, Blackmore, & McMurray, 1998). However, the questions are almost universally asked by instructors; students are not required to develop and ask questions about the clinical situations in which they engage. Forneris and Peden-McAlpine (2007) found that when novice nurses asked questions, their thinking advanced from a sequential, rules-oriented type of thinking to one where they considered the context of the situation; this advanced thinking style incorporated past experiences, knowledge, and patterns that were evident in the situation. The development of questions underscored the important contextual elements that helped the nurses to learn from the experience. It would stand to reason that the process of asking questions might also assist nursing students to advance their thinking and to learn from their clinical experiences. This study
sought to determine the stages of inquiry that participants displayed through the questions they asked and answered in postings to the online clinical post-conference.

**Problem Statement**

The U. S. health care system today has been described as being complicated, chaotic, and even dysfunctional (Benner, Sutphen, Leonard, & Day, 2010). Nurses must be able to respond to constantly changing needs in the world of nursing practice as they face unique and challenging situations. Technical knowledge is no longer enough for nurses to understand practice in today’s complex health care delivery systems (Sherwood & Horton-Deutsch, 2012). Recent graduates often state that they feel unprepared to face the many different situations that confront them daily in their practice (Wangensteen, Johansson, & Nordstrom, 2008). Correspondingly, nurse executives have noticed a growing gap between the performance expectations clinical facilities have for new graduate nurses and how the new graduate nurses are prepared when they enter the workforce (Ohio Organization of Nurse Executives [OONE], 2010). This is understandable because, while the U.S. health care delivery system has changed drastically, the traditional nursing education paradigm has remained largely the same for the last 40 years (Sherwood & Horton-Deutsch, 2012). It is clear that today’s nurses need new and flexible ways of responding to, and learning from, the complex clinical situations they experience; therefore nursing education must develop a new paradigm. Research has indicated that reflection is a method that would enable nurses to effectively learn from their experiences (Palmer, Burns, & Bulman, 1994) and to develop into expert practitioners who are able to cope with the demands of nursing practice today (Sherwood & Horton-Deutsch, 2012).
The profession of nursing needs nurses who are able to ask the right questions about their patients and are capable of finding out the answers to those questions. The right questions are those that deal with complexity and require going beneath the surface to answer them (Elder & Paul, 1998). Research has shown that students who engage in inquiry are more engaged and motivated and the use of inquiry greatly increased their problem-solving ability (Brown, Abell, Demir, & Schmidt, 2006; Furberg, 2009; Kroll, 2005). Nursing students, therefore, may benefit from an inquiry-oriented approach to their learning and practice.

In a review of the literature, very few studies were found that investigated how baccalaureate nursing students utilized reflection and inquiry in their learning and clinical practice, and no studies explored whether the venue of the online clinical post-conference contributed to the development of reflection and inquiry. This study endeavored to fill that void in the field of nursing education because it explored, described, and analyzed how students developed in their ability to use reflection and inquiry at higher stages through the use of the online clinical post-conference.

**Purpose of the Study**

This qualitative study had a dual purpose. The purpose of the study was to investigate how participants developed in their ability to use reflection and how participants developed in their ability to engage in inquiry through the use of the online clinical post-conference. The study sought to determine the stages of reflection participants exhibited in their postings to the online clinical post-conference and to determine the stages of inquiry displayed in their postings to the online clinical post-conference.
The two research questions that guided this study were:

1. What stage of reflection do participants exhibit when using an online post-conference and do those stages increase over time?
2. What stage of inquiry do participants exhibit when using an online post-conference and do those stages increase over time?

Professional Significance of the Study

Both society and the healthcare delivery system have changed drastically in the last 10 or 15 years. Nurses today are facing enormous pressures that impact their ability to provide safe and effective nursing care to this nation’s citizens. These pressures come from the health care system itself, from economic forces that drive healthcare today, and from overwhelming advances in science and technology (Benner et al., 2010). To help nurses deal with the pressures that they will face in practice, the way nurses are educated must change. Two major organizations charged with overseeing nursing education in the United States are the American Association of Colleges of Nursing (AACN) and the National League for Nursing (NLN). Both organizations issued statements mandating that nursing curricula prepare students to practice in today’s changing world, nursing education programs must explore new pedagogies and new ways of thinking about nursing education, and nursing programs must prepare students to be technologically competent (AACN, 2008; NLN 2003, 2008). These new pedagogies would entail the use of new instructional strategies. A new pedagogy and new way of thinking about the clinical post-conference—the online clinical post-conference—was explored in this study.
In its publication “Essentials of Baccalaureate Education for Professional Nursing Practice,” the AACN (2008) described the educational framework for the preparation of professional nurses. The nation’s colleges of nursing use the recommendations outlined in the Essentials document to develop curriculums that produce graduates who are prepared to take their place in professional nursing practice. The Essentials document states that today’s registered nurse needs to be prepared to utilize clinical/critical reasoning to address the complex situations that nurses find in the diverse health care environment and that nurses need to be able to evaluate their own practice (AACN, 2008, NLN, 2003).

Reflection and inquiry are concepts that can be utilized to encourage the development of clinical reasoning, critical thinking, and self-evaluation (Burton, 2000; Hsu, 2007). The clinical post-conference is one teaching tool used to encourage the development of critical reasoning, higher-order thought processes and learning from clinical experiences (Oermann, 2008). Incorporating reflection and inquiry into the clinical post-conference and teaching students to develop reflection and inquiry at higher levels is one method of teaching the clinical reasoning and inquiry that the AACN and NLN find to be so important for today’s nurse.

Scientific advances, changing patient populations, emerging technologies, and access to health-related information are other forces that influence the role of nurses in today’s society (AACN, 2008). Dealing with all these contingencies of the health care field requires new ways of thinking and acting on the part of nurses. Nurses must be able to function autonomously and interdependently within the healthcare team. Baccalaureate programs in nursing must prepare their graduates to apply “inquiry and analysis to address
practice issues” (AACN, 2008, p. 12) and to “explain the interrelationships between theory, practice, and research” (p. 16). Reflection and inquiry are seen as ways of accomplishing these goals (Burton, 2000; Hsu, 2007). In addition, Sigma Theta Tau International (STTI), the Honor Society of Nursing, published a position paper entitled “The Scholarship of Reflective Practice,” which summarized the issues involved in educating nurses for reflective practice and outlined five recommendations regarding the development of reflective practice in nurses. These recommendations stated that nursing education should incorporate reflective models, theories, and processes when preparing nurses so that nurses are educated to be reflective practitioners and leaders who will contribute to improvements in patient care and to the development of nursing as a profession (Freshwater, Horton-Deutsch, Sherwood, & Taylor, 2005). This position paper is important because Sigma Theta Tau International is an international nursing organization that represents nurses in 86 different countries and all nursing specialties and advocates that reflection be used globally in nursing education.

Assumptions and Limitations

Assumptions of the study were that participants created their online discussion postings with thought and care and the postings provided a true representation of participants’ thoughts and feelings. Additional assumptions were that participants were candid and honest during the interviews and participants understood the meanings of terms and concepts used in the study.

This study had several limitations. The study examined the experience of senior baccalaureate nursing students in two different clinical courses at one university in a
predominantly rural county in a Midwest state. Participants were purposefully selected from these courses based on their willingness to participate. Study results therefore cannot be generalized to different levels of nursing students (i.e., sophomore or junior students), to nursing students in other types of nursing programs (i.e., associate degree or diploma programs), or to other areas of the country. In addition, no attempt was made to examine the impact of gender, age, or culture on stages of reflection and inquiry displayed by participants because this study specifically examined the stages of reflection and inquiry participants evidenced through the use of the online clinical post-conference.

**Definitions of Key Terms**

**Asynchronous discussion board:** The asynchronous discussion board is an online communication forum where messages are left at a specific posting site from which the others in the learning group can read and respond to at their convenience. The asynchronous discussion board produces a threaded discussion where responses are listed under the original message (Al-Salman, 2010).

**Clinical post-conference:** A clinical post-conference is a clinically focused debriefing experience attended by faculty and students in a clinical group after the completion of a clinical experience (Mitchell & Krainovich, 1982).

**Inquiry:** Inquiry is the process of asking questions, generating and pursuing strategies to investigate those questions, communicating those conclusions, applying conclusions back to the original question, and perhaps following up on new questions that arise (Sandoval, 2005).
**Online clinical post-conference:** The online clinical post-conference was a debriefing experience conducted via the computer after a clinical experience. The students were required to post their reflections following a set of guidelines within 48 hours of completing a clinical experience. The online clinical post-conference utilized the format of an asynchronous discussion board to display student thoughts and to allow them to communicate with the instructor and with the other students in the course.

**Reflection:** Reflection is a multi-faceted and complex concept that contains many important ideas and activities. The dictionary defines reflection as “serious and deep thought” and reflecting as “thinking deeply and carefully, especially about possibilities and opinions” (Cambridge Dictionaries Online, 2011). Reflection is stimulated by an unusual or confusing situation or experience, involves actively investigating one’s responses, beliefs, and ideas taking into account the situation at hand, and results in the assimilation of the new knowledge into one’s repertoire (Rogers, 2001).

**Reflection-in-action:** Reflection-in-action is thought about and examination of behavior that occurs in the moment it happens in order to influence subsequent actions. The ability to reflect-in-action develops in time as practitioners move from reflecting after the action has taken place to reflecting while they are in the midst of the action (Schön, 1987).

**Reflection-on-action:** Reflection-on-action occurs after an event occurs and is a factor in the development of practice skills. The process consists of recalling an experience that occurred and looking back at it with the intent of analyzing and interpreting the situation to uncover the knowledge that was gained by that experience (Schön, 1987).
CHAPTER II

REVIEW OF THE LITERATURE

This chapter reviews relevant literature that provides a foundation for conducting research that examined the use of reflection and inquiry in the clinical education of baccalaureate nursing students. Many educational and nursing researchers have studied reflection (Dunfee et al., 2008; Hesook, Clabo, Burbank, & Martins 2010; Loughran, 2002), but much less research has been conducted on the use of inquiry in nursing education. This study investigated how participants developed in their ability to use reflection and inquiry at higher stages through the use of the online clinical post-conference.

The following literature review examines literature pertinent to the research study, specifically looking at what has been published regarding reflection and inquiry, clinical post-conferences, and the use of online technology to create online clinical post-conferences. Chapter 2 includes four sections: (a) reflection, (b) inquiry, (c) clinical post-conferences, and (d) online clinical post-conferences.

Reflection

Reflection is a human activity that allows people to recapture, think about, and evaluate an experience (Boud et al., 1985). Schön (1987) concentrated his work on reflection and professional practice. He stated that the process of reflection includes the act of thinking about what is learned as well as thinking about how one learns. Furthermore, he argued that reflection is a way of examining thoughts, feelings, and actions while actually engaged in professional practice, allowing professionals to uncover knowledge in
and on action. Schön (1983) also argued that experienced professionals developed ‘theories in use’ that defined their practice. Reflection enabled practitioners to develop practical knowledge as they made sense of their work in theoretical ways (Schön, 1983). In other words, he argued that theory defined practice and arose from practice. Pierson (1998) described reflection as a thoughtful, innovative, and critical practice.

Dewey (1933) considered experience as having two parts: primary and secondary experiences. “Primary experiences,” he said, are those activities of everyday life that have consequences; these are the interactions that make an impression on a person (Dewey, 1933). Thinking about an activity or experience and what the experience meant (reflecting on the experience) is what Dewey termed a “secondary experience.” Dewey (1933) argued that secondary experiences are very important to learning because the action of reflecting clarified the meaning of the primary experience and allowed for the construction of knowledge, or learning, to occur.

Dewey (1938) also described people as having educative experiences and mis-educative ones. Mis-educative experiences are those that do not encourage growth; these experiences narrow the field of future experience. An experience is considered educative and worthwhile when the learner is encouraged to make a link between the activity (or experience) and the consequences of that activity or between past, related activities and the current activity. Reflection is the process that enables this link to occur (Dewey, 1938).
Reflection as an Active Process

The reflective process is an active process that requires students to analyze learning in terms of their own experiences, biases, values, beliefs, opinions, and attitudes (Boud et al., 1985; Mezirow, 1990) and enables students to challenge beliefs and change values (Green, 2002). Because reflection provides for the exploration of one’s values, beliefs, attitudes, and opinions, reflection allows learners to seek solutions to problems from many different perspectives. In this manner, Mezirow (1990) defined learning as “transformative.” His theory is based on constructivist principles and states that individuals learn through their own frames of reference, or meaning perspectives. People understand the world based on what they previously saw, read, or experienced. Many people, however, do not examine their meaning perspectives. The best learning occurs when people challenge their meaning perspectives by becoming aware of their assumptions and expectations and transform and expand their thinking to be more inclusive, reflective, open, discriminating, and flexible (Mezirow, 1990). Through positive, beneficial discussion, the transformative learner will elucidate personal assumptions and come to understand the reasons behind those assumptions. Finally, transformative learners will be able to make decisions on the ensuing insights. The concept of reflection is a key component of transformative learning theory (Mezirow, 1990).

Reflection also facilitates engagement in higher-order thinking (Bloom et al., 1956) so that students will more easily progress from the knowledge and comprehension levels to the analysis, synthesis, and evaluation levels of thinking that are so important for nursing practice (Dunfee et al., 2008). Perhaps most importantly, reflection provides the impetus
for students to progress from basic thinking to critical inquiry (Epp, 2008). However, most of the studies that examined the utilization of reflection in nursing students have used graduate nursing courses, not undergraduate nursing courses. This study adds to the knowledge in the field because it investigated the stages of reflection displayed by undergraduate baccalaureate pre-licensure nursing students.

**Reflection as Part of Professional Practice**

Schön’s work dealt mainly with professional practice, and he described reflection as a viable way that professionals derived knowledge. Schön (1987) introduced the concept of reflection as an important part of professional practice, and he coined the term, “reflective practitioner.” Learning by reflective practice is in direct opposition to the previously prevailing idea that professionals use “technical rationality,” a set of rote scientific principles and knowledge, to solve all the problems encountered in professional practice (Schön, 1987). The scientific theory and technique that comprise technical rationality are taught to professionals in school. It consists of specific, scientific, and standardized knowledge. This knowledge is composed of basic science knowledge (e.g., anatomy and physiology) and, more importantly, applied science, which professionals use to guide their work. In addition, certain skills and attitudes are important to each profession. However, Schön argued that technical rationality does not explain completely what professionals do when solving problems because the problems professionals most often face are not clear-cut or abstract; they are reality-based and cannot be easily solved using rote theories and standardized knowledge (Schön, 2001). So, many times professionals use the “trial and error” method of solving problems and
often say that they have a “gut feeling” about a situation they encounter. This “gut feeling” is the result of knowledge that professionals have gained from their experiences (Schön, 2001).

Therefore, Schön (2001) recommended that professionals reflect and described two types of reflection: “reflection-on-action” and “reflection-in-action,” that are important ways professionals learn. Learning through reflection increases the effectiveness of professionals (Rogers, 2001). Professional practitioners acquire knowledge by gaining experience (which Schön called “doing in practice”) using a method of moving between reflection-on-action and reflection-in-action

**Reflection-on-action.** The ability to use reflection-on-action arises first in professional development (Schön, 1983). Reflection-on-action (or retrospective reflection) takes place after an event occurs and is a factor in the development of practice skills (Schön, 1987). The reflection-on-action process consists of recalling an experience that occurred for the purpose of analyzing and interpreting the experience to uncover knowledge that was gained by the experience (Schön, 1983). A good portion of the knowledge base of any professional field (medicine, nursing, education, law) is the result of professionals reflecting after the action or experience has occurred (Rogers, 2001).

Reflection-on-action permits the professional to assess, explain, question, and evaluate the situation and action in order to gain insights for better actions in the future (Cotton, 2001). Reflection-on-action also encourages students to develop a new understanding of themselves and the situations they have encountered (Schön, 1987).
Schön’s reflection-on-action correlates very well to Dewey’s (1938) secondary experiences.

The technique of requiring students to think about what they have experienced is often used with students who are beginning to learn the reflective process. Any thinking exercise that is conducted after an experience has occurred encourages students to reflect-on-action (Schön, 1987). Nursing students in a clinical post-conference (a debriefing experience) engage in reflection-on-action as they think back on the nursing care they provided that day and what they learned from it. This study examined online clinical post-conference postings of participants’ reflection-on-actions to determine how participants developed in their ability to use reflection at higher stages through the use of the online clinical post-conference.

Reflection-in-action. Reflection-in-action (or contemporaneous reflection) is reflection on behavior in the moment it happens in order to optimize subsequent actions (Schön, 1983). Since reflection-in-action is reflection that occurs while the experience is occurring or in the midst of practice, it is often referred to with “phrases like ‘thinking on your feet,’ ‘keeping your wits about you,’ ‘learning by doing’ (and) suggest that we can think about doing something while we are doing it” (Schön, 1983, p. 54). Johns and Freshwater (2005) described reflection-in-action as “pausing within a particular situation or experience in order to make sense and reframe the situation so as to be able to proceed towards desired outcomes” (p. 6).

The ability to reflect-in-action requires time and experience to develop because it requires that practitioners move from reflecting after the action has taken place to reflecting
while they are in the midst of the action (Schön, 1983). This shift occurs because practitioners, as they become more experienced, develop an awareness of their thoughts and associated behaviors while the experience is still happening instead of having to rethink the experience after it has occurred. In reflection-in-action, the awareness of one’s thoughts and actions facilitates a change in the practice that is currently taking place (Schön, 1983).

Reflection-in-action is considered to be an effective way in which practitioners develop knowledge. When experienced practitioners are confronted with a new situation or problem and are able to recognize it as such, they then are able to think about the problem or situation and recall similar situations from their past in the midst of their acting. Doing so enables them to come up with solutions to the problem (Palmer et al., 1994). Reflection-in-action, then, occurs while the nurse is engaged with patients and influences the decisions that are made and the care that is given that day (Schön, 1987). Reflection-in-action allows practitioners to use implied and unspoken knowledge learned from experience in order to change their actions in the moment that they are acting (Schön, 1987, p. 277).

Schön (1983) argued that there are several outcomes of reflection-in-action. Professionals who reflect-in-action learn to cope more effectively in areas and times of uncertainty and when practice situations do not nicely fit into the norm. They learn new theories more easily and can cope with changes in the professional situations they encounter. In short, reflection-in-action helps professionals to construct new professional knowledge (Schön, 1983).
The Importance of Reflection in Nursing Education

Since the publication of Schön’s seminal work, *The Reflective Practitioner*, in 1983, reflection and reflective practice have become timely topics for those in nursing practice and in nursing education and have been consistent topics in nursing literature. The purpose of teaching students how to reflect on their practice is twofold; by utilizing reflection, nurses can critically analyze their practice and acquire new knowledge; more importantly, they can improve their practice and change the field of nursing (C. Carroll et al., 2002).

Reflection is an important concept in nursing education today (Burton, 2000; Chong, 2009; Epp, 2008), one of the aims of the nursing curriculum is to produce thoughtful practitioners (nurses) who are able to base their practice on critical thinking, who are good clinical decision makers, and who are lifelong learners (Hsu, 2007). Lifelong learning is important because it provides for continued professional currency and competency (Owen & Stupans, 2009). In addition, reflection provides a suitable way for students to understand the work of the nurse as well as to develop the ability to provide thoughtful care to patients in very complex situations (Pierson, 1998). By reflecting on their own practice, nursing students can start to make sense of the theory they learned in the classroom by applying it in the clinical situation (Hsu, 2007). The accomplishment of translating experience into meaning is very important to the development of a student nurse.

Reflection serves many purposes. It bridges the gap between theory and practice and enables the creation of nursing knowledge from practice (Burton, 2000; Duke &
Reflection is seen as a method of developing nurses’ knowledge to meet patients’ needs and of making nurses critical thinkers (Burton, 2000). Reflection also provides a way to explore judgments and clinical decisions that have been acted on in practice (Mantsoukas & Jasper, 2004). Pierson (1998) described reflection as a thoughtful, innovative, and critical practice.

Kim, Clabo, Burbank, and Martins (2010) stated that reflection encouraged self-examination, which is a critical process for professional development. In their study of undergraduate nursing students, Kim et al. found that, using reflection, students learned from clinical experiences and used experience to develop practice.

**Reflection in Nursing Research**

Recently, reflection has been a frequently studied topic in nursing research. Duke and Appleton (2000) examined the nature of reflection. They conducted a quantitative study of 62 practicing nurses taking an end of life nursing course over the duration of an academic year. Students were required to compose reflections about assigned clinical practice situations, which were analyzed using a grid that examined the range of reflective skills (from no evidence to significant evidence of reflection). Results of the study showed that reflection is comprised of several different stages and that reflection is developmental—the students’ ability to reflect developed over time. My study investigated the use of reflection and inquiry in nursing education and sought to discover how students developed in their ability to use reflection and inquiry at higher stages through the use of the online clinical post-conference.
Two studies specifically looked at ways to measure the reflective level of nursing students (Usher, Tollefson, & Francis, 2001; Wong, Kember, Chung, & Yan, 1995). Wong et al. (1995) examined the reflective journals of post-registration Bachelor of Science in Nursing students in Hong Kong. These students were already licensed, practicing registered nurses who returned to school to earn the baccalaureate degree. They used the theoretical work of Boud et al. (1985) and Mezirow (1990) as the foundation for assessing the quality of the students’ reflection. These theories stated that there were three levels of reflectors: non-reflectors, reflectors, and critical reflectors (Mezirow, 1990). The results of the study showed that the majority of the students demonstrated reflection mainly at the “attending to feelings,” “association,” and “integration” stages while only a small number of the students demonstrated reflection at the “critical reflector” stage. This led the researchers to determine that most nursing students were at the “reflector” stage, that is, they were able to reflect on their practice, but not at a high level (Boud et al., 1985). Wong et al. (1995) concluded, as a result of their study, that student writing in reflective journals could be used to provide evidence of reflective thinking and that the stages of reflection of Boud et al. (1985) and Mezirow (1990) were a straightforward way of measuring levels of reflection. Boud et al.’s (1985) model of reflection was used in this study to determine which stages of reflection were displayed by the participants in their postings to the online clinical post-conference.

Usher et al. (2001) also studied reflection in nursing students. They examined the reflective writings of undergraduate nursing students in Australia with the intent of seeing whether reflective ability could be enhanced and whether the reflective stages demonstrated
by students could be changed. Students were asked to compose a piece of reflective writing each week and to self-evaluate their stages of reflection. The findings of the study indicated that the nursing students developed an understanding of the different stages of reflection and that the stages of reflection displayed in their writing changed as a result (Usher et al., 2001).

Many researchers have found that reflective practice is of benefit to nurses and other healthcare professionals (Clouder & Sellars, 2004; Smith & Jack, 2005). Chong (2009) found that students had positive perceptions toward the usefulness of reflection; they thought they could use it to improve their decision making ability and that it played a role in incorporating theory into nursing practice. Clouder and Sellers (2004) found this also to be true with physiotherapists and occupational therapists, and they determined that reflection aids these healthcare professionals in gaining the necessary skills to practice autonomously. However, although reflection in nursing has been around for a long time, the latest surge in this topic signals a renewed interest in the use of reflection for students because health care is becoming increasingly complex, thus requiring a greater need for nursing students to be critical thinkers and life-long learners.

**Methods Used to Encourage the Development of Reflection**

The literature includes several different methods to encourage the development of reflection. Jasper and Warren (2004) advocated using a form of conscious reflection to enable students to learn from their clinical experiences. To encourage the process of reflection, they described a tactic they called “three-a-day” (p. 19). In this approach students are asked to reflect on three of anything that occurred during the course of a
clinical day. This could be three things that went well, three things that were new to them, or three things that they learned. This process provides a scaffold that enables students to begin the process of reflection and to begin thinking about things from other viewpoints.

Other methods shown to be effective in increasing reflection skills and learning include using a series of structured questions that provide directed journaling (Bilinski, 2002; Milinkovic & Field, 2005); utilizing role modeling, broad, general questions (inquiry), and critical incidents (Brookfield, 1990; Loughran, 2002; Sparks-Langer & Colton, 1991); incorporating seminar group discussions (Loughran, 2002); and using reflective journals (Chirema, 2007; Epp, 2008; Loughran, 2002). Additional strategies that have been used to promote reflection include learning diaries, reflective practice groups, critical incident analyses, and problem-based case studies (Williams, 2001).

Riley-Doucet and Wilson (1997) found that the addition of a peer group discussion to journaling increased reflection and analysis. Chirema (2007), in her study of 42 undergraduate nursing students, and Smith and Jack (2005), in their study of graduate students, found that student writing can be examined to see evidence of reflective thinking. Journals were shown to be a useful tool for promoting reflection and learning. In addition, Smith and Jack (2005) found that students felt that keeping a reflective diary was difficult to do; however, many still thought that it was beneficial to them. As the course progressed and students became more self-aware and confident with the reflection process, they verbalized the benefits of reflecting on their achievements. Some students were even able to change their practice based on their reflections (Smith & Jack, 2005).
Taylor-Haslip (2010) also examined the benefits of reflective journal writing. In a study of 30 undergraduate nursing students, she found a positive correlation between a student’s stage of reflection evidenced in a reflective journal and the student’s clinical performance and performance on written exams. Taylor-Haslip concluded that a high level of reflection is necessary for growth in both the classroom and the clinical area.

The purpose of my study was to investigate how students developed in their ability to use reflection and inquiry at higher stages through the use of the online clinical post-conference. Asynchronous discussion board postings of students engaging in the online clinical post-conference were examined to identify which stages of reflection and inquiry were displayed in the postings and to determine if those stages increased over time.

**Inquiry**

Inquiry is the way people learn when they ask questions and a way to explore knowledge if people actively seek answers to the questions they ask (Sandoval, 2005). Dewey (1933) and Schön (1987) also agreed that inquiry is a way people learn and make meaning from their experiences. They described inquiry both as a way of gaining knowledge and a way of solving problems.

Dewey (1933) felt that the purpose of education is to encourage students to change their experiences and their social history through inquiry. Dewey argued that reflection was the core of the thinking process and that a meaningful educational process should be based on the process of reflective inquiry (Dewey, 1933). Reflective inquiry is stimulated by a bewildering and confounding situation and ends with a unified or resolved situation as
a result. This technique of inquiry is based on experience and surfaces through practice, however, inquiry also shapes practice (Dewey, 1933).

Inquiry is also seen as a prolonged investigation of a subject or issue that is of interest to students; it is undertaken with a goal of gaining awareness and increasing knowledge. Inquiry learning is made real by the scientific method where conclusions are reached through reasoning (Pardales & Girod, 2006). This reasoning is inductive in nature and it allows people to move from old beliefs to new beliefs through experience (Pardales & Girod, 2006).

**Inquiry as a Method of Problem Solving**

For Dewey (1933), Schön (1987), and Vygotsky (1978), inquiry was a method of problem solving. Dewey (1933) posited that, when students encounter questions or problems for which they cannot find solutions with current knowledge, in order to learn, they must actively seek an answer to those questions or problems. They seek answers by developing and testing hypotheses that will answer the questions (Dewey, 1933).

Dewey’s (1938) primary experiences function as both the basis for secondary experiences (reflections) and to test the hypothesis formation that accompanies reflection and inquiry. The hypothesis is the intellectual tool created when students use experiences to solve a problem, answer a question, or determine a feeling of how things work in the world (Dewey, 1938). Once students establish a hypothesis, the processes of inquiry and deductive reasoning help students test the hypothesis and construct knowledge to answer questions or solve problems (Dewey, 1938). Once developed, this knowledge becomes a part of future inquiry (Glassman, 2004).
Schön (1992) described inquiry in terms of discovery. He stated that inquiry is used to make sense of some puzzling phenomenon. The professional inquirer first relates the phenomena to what is already known and then formulates and tests a new hypothesis that might explain the phenomena. The purpose of inquiring is to discover a workable understanding of a problem (Schön, 1992).

Vygotsky (1978) also contended that inquiry is a method of problem solving; however, he took a more social view of inquiry than did Dewey and Schön. Vygotsky stated that the ability to solve problems develops from experiences in talking with others. He espoused a social constructivist learning perspective, which proposes that individuals learn and solve problems by sharing ideas and opinions with others. Sharing ideas and opinions is the main idea behind the use of asynchronous discussion boards and of the online clinical post-conference. In the online clinical post-conference, this study used the asynchronous discussion board as the venue for participants to post their reflections and inquiries. Participants then read the postings of all other participants and responded to them, sharing ideas and opinions, thereby learning from each other.

Research indicates that students who engaged in inquiry were more connected and motivated because they were learning about topics that were interesting to them, and the use of inquiry greatly increased students’ problem-solving ability (Brown et al., 2006; Furberg, 2009; Kroll, 2005). Kroll studied 13 graduate students in Early Childhood Education. The students participated in a number of small inquiry projects within the context of their field placement over the course of a school year. They were required to identify questions, and they then used those questions to investigate the problems of
practice that the questions represented. Findings indicated that the practice of inquiry made the student teachers’ practice more specific and purposeful. Having a question in mind as they went to teach helped them to be more thorough in examining all the issues involved with their situation and also helped them to develop answers to those questions; these answers translated into solutions that carried over into other situations they faced (Kroll, 2005). Since an inquiry-oriented practice improved the student teachers’ practice in Kroll’s study, it might be logical to assume that an inquiry-oriented practice might improve student nurses’ practice in the same way. However, no studies were found that investigated the use of inquiry with nursing students. My study bridged that gap.

**Models of Using Inquiry in Education**

The major models of using inquiry in education include inquiry based education, inquiry-based learning, and the Community of Inquiry (CoI) model (Furberg, 2009; Garrison, Cleveland-Innes, & Fung, 2010; Kroll, 2005; Magnussen, Ishida, & Itano, 2000). Inquiry-based education helps students to gain a deeper knowledge of the world because they are investigating what is meaningful to them (Furberg, 2009; Kroll, 2005). Research has shown that students who use inquiry in their learning are more engaged and motivated and their problem-solving ability is greatly increased (Brown et al., 2006; Furberg, 2009; Kroll, 2005).

Inquiry-based learning (IBL) was developed to increase student involvement in the learning process (Magnussen et al., 2000). IBL purports educating students to be critical thinkers, problem solvers, effective communicators, good collaborators, leaders who can easily analyze issues, and most of all, become lifelong learners (Justice, Rice, Roy,
Hudspith, & Jenkins, 2009). In IBL, students learn about inquiry, and through inquiry develop the higher-order thinking skills that lead them to be self-directed learners (Lim, 2004). The process of IBL consists of student-driven and instructor-guided investigations of student-generated questions. IBL requires students to be actively engaged with the content, as opposed to the traditional teaching method that is lecture-driven and memory oriented. Learning activities consist of open-minded discussions, questioning of assumptions, and critical assessment of information, evidence, and argument (Justice et al., 2009).

**Inquiry in Online Environments**

The Community of Inquiry (CoI) model (Garrison, Cleveland-Innes, et al., 2010) was created specifically for use in online environments. It describes a method of educating students using an inquiry approach that begins with the identification of a problem or task; this is followed by hunting for pertinent information or knowledge, clarifying and integrating ideas, and, finally, testing credible explanations to the problem. All this occurs in an environment of reflection (deliberation or purposeful thinking), discourse, analysis, and synthesis (Garrison, Cleveland-Innes, et al., 2010).

In online environments, knowledge is created through social interaction that occurs through synchronous or asynchronous communication, however most online communication is asynchronous (Shea & Bidjerano, 2010). Synchronous communication is conducted in real time and requires that all students and the instructor in the class be online and available at the same time. It allows for instant interactivity but is inconvenient (Hiltz & Goldman, 2005). Asynchronous communication, on the other hand, allows each
person in the class to send and receive communication at the time, place, and speed that is convenient for them and produces more in-depth discussions (Hiltz & Goldman, 2005). Garrison, Anderson, and Archer (2000) undertook the task of developing a new pedagogy for online teaching and learning. The result was a conceptual model of online instruction that encouraged knowledge construction that could be empirically tested with research. The principle underlying the framework was that higher-order learning is best supported in a community of learners who are involved in critical reflection and discourse (Garrison, Cleveland-Innes et al., 2010).

Their model, the Community of Inquiry (CoI) Model, identifies the critical components fundamental to a successful higher educational experience where computer-based asynchronous discussions play a major role in the learning. This model is consistent with both Dewey’s work on community and inquiry and Vygotsky’s social constructivist epistemology and is conceptually grounded in theories of teaching and learning in higher education (Garrison, Anderson, & Archer, 2010).

According to the CoI model, both teachers and students are keys to a successful learning experience. Learning occurs through the interaction of three core elements: cognitive presence, social presence, and teaching presence. In addition to describing the three core elements, the model was created to address the dynamics of computer conferencing in higher education, specifically the use of asynchronous text-based group discussions (Garrison, Anderson, et al., 2000, 2010). Asynchronous text-based group discussion occurs when students in an online class post responses, thoughts, ideas, and answers to questions to an asynchronous discussion board. It produces reflective and
careful communication as opposed to the fast-paced, spontaneous, and short-lived communication that occurs in face-to-face or teleconferenced classrooms (Garrison, Anderson, et al., 2010). This study utilized the asynchronous discussion board in the online clinical post-conference for students to display their reflections and their inquiries.

Of the three elements in the CoI model, cognitive presence is considered to be most essential to success in higher education. Cognitive presence represents a collaborative learning and inquiry process and is defined as the extent to which participants are able to create meaning through prolonged reflection, continued communication, and the use of inquiry (Garrison, Cleveland-Innes, et al., 2010). Critical thinking, an important outcome in nursing, as well as all higher education, is a vital part of cognitive presence (Garrison, Anderson, et al., 2000). Cognitive presence incorporates a method where inquiry can be taught to students and describes a technique of inquiry that is based on experience. In the COI model, inquiry surfaces through practice and also shapes practice as students engage in purposeful thinking and acting. Inquiry is seen both as a way of solving problems and a way of gaining knowledge (Garrison et al., 2000).

In the CoI model, inquiry is viewed as a multi-step process, termed the practical inquiry model (PIM) that includes the following steps: identifying a question, problem, or task; hunting for pertinent information or knowledge; and clarifying and integrating ideas. The final step of the inquiry process involves testing credible explanations to the problem; the entire process occurs in an environment of reflection (deliberation or purposeful thinking), discourse, analysis, and synthesis (Garrison, Cleveland-Innes, et al., 2010).
PIM has four stages: state of dissonance (or a triggering event), exploration, integration, and resolution (Garrison et al., 2000, 2001). The state of dissonance results in a feeling of unease created by some triggering event in the experience that produces a dilemma. From this state of unease, information, knowledge or alternatives that might be helpful in solving the dilemma are sought. The third stage is the attempt to look for insights and then to integrate knowledge and information gained into a coherent thought or view. Finally, this process results in the resolution of the issue and solution to the problem (Garrison et al., 2000, 2001). Garrison et al.’s (2000, 2001) PIM was used in this study to determine what stages of inquiry were displayed by the participants in their postings to the online clinical post-conference.

**The Importance of Student Questions in Learning How to Learn**

A beginning step in the inquiry process is that of asking questions. Instead of the phrase “asking questions,” Schön (1983, 1987) described the process of inquiry by using the term “problem setting” and stated that problem setting is used to determine the boundaries of what is considered to be relevant to the particular student. Schön (1987) maintained that more emphasis must be placed on problem setting than on problem solving. In other words, students must ask the right questions before they can find meaningful answers.

In the process of asking questions, people decide what interests them, what decision is to be made, what means they will use to make the decision, and what outcome they would like to see (Schön, 1983, 1987). In the world of real practice, problems are not often obviously stated; the practitioner must structure them from puzzling, and often troubling,
uncertain circumstances. Only after the problem is accurately identified and the right question is asked can professionals proceed to answer the question and solve the problem (Schön, 1983, 1987).

The use of inquiry is seen as a method of improving the education of college students because it encourages more student-directed, interactive ways of learning and teaches students how to learn (Justice et al., 2009). Dewey (1938) felt that education should enable learners to continually amass and test new knowledge. The teacher should use student interest and motivation in this process. Students must merge prior knowledge with current endeavors to answer their inquiries.

The key to the success of using inquiry in education is that the questions need to be student-generated. Students learn best when they are involved in the subject, as they are when students are seeking answers to questions they themselves have raised (Justice et al., 2009). Inquiry-based education endeavors to spark a student’s curiosity and to develop the urge to explore and to understand. The use of inquiry also aims to motivate students to learn through personal engagement. As students seek answers, they learn valuable skills of assessing information and evidence, as well as establishing concepts and facts. This process prepares them to become lifelong learners (Justice et al., 2009).

Inquiry-based education teaches students to develop clinical reasoning skills, helps them to become self-directed, and increases motivation. Inquiry helps all students to be actively involved in their own learning and encourages cooperation between students (Cleverly, 2003).
The Use of Inquiry in Motivating Students

Humans are creatures of habit and comfort. Many students do not habitually speculate about the unknown; they are content to take what is evident before them and not dig deeper to ask questions. Dewey (1933) argued that not knowing an answer creates a feeling of discomfort; students must be interested enough in the topic of their question or problem that it impels them to go from a state of comfort to one of discomfort or conflict. Interest is what motivates people to find answers to the problems that are troubling them. If students are not interested in the topic of the question or problem, they will not pursue finding an answer to that question (Dewey, 1933).

Because of this, Dewey (1938) put interest at the center of the educational process as the primary driving force for people seeking knowledge or working out problems. Dewey (1916) stated that “people learn when they seek answers to questions that matter to them.” (p. 54). Interest must come from the interaction of the student with the experience; it cannot be artificially injected by a teacher into a student (Dewey, 1916). Therefore, Dewey (1916) argued that students must control the inquiry process because inquiry should be based on the aims and goals of the learner. He argued that people learned best when they decide what goals are important to them and they decide how to meet those goals. As students learn that they are responsible for the inquiry in their own lives, they decide what goals are important and how to meet those goals (Dewey, 1916).

Inquiry is an active process and a skill that matures over time and with practice (Furberg, 2009; Kroll, 2005). Requiring students to ask their own questions instead of answering the teacher’s questions bridges the gap between what is known and what is not
and helps students gain a deeper knowledge of the world because they are investigating what is meaningful to them (Furberg, 2009; Kroll, 2005). Callister, Matsumura, Lookinland, Mangum, and Loucks (2005) studied the use of inquiry to help nursing students gain critical thinking skills and to motivate them to achieve a greater, and more positive, understanding of the importance of nursing research. They asked students to reflect in clinical journal entries related to inquiry. They requested that students write down thoughts about their clinical experiences and to identify problems and questions encountered. Results of this study found that students identified in their journals a greater understanding of “the real world,” improved critical thinking skills, and positive attitudes toward evidence-based practice and nursing research (Callister et al., 2005).

Research has shown that students who engage in inquiry are more engaged, more motivated, and possess greatly increased problem-solving abilities than those who don’t engage in inquiry (Brown et al., 2006; Furberg, 2009; Kroll, 2005). Much of the research on inquiry has been conducted in the education field, specifically in teacher education and science education. Brown et al. (2006) conducted a study that looked at how college professors viewed inquiry. They found that college professors identified increased motivation and critical thinking as benefits of inquiry-based instruction. In addition, the professors felt that student engagement was much higher when students were actively involved in the inquiry and learning process (Brown et al., 2006)

Kroll (2005) conducted a study on 13 student teachers in a graduate program in Early Childhood Education that explored the effect of students developing questions about their teaching and actively investigating the answers. She found that inquiry did have a
positive effect on the student teachers’ teaching. Considering questions as they taught allowed the student teachers to analyze and reflect on their practice in a more specific and purposeful manner. She concluded that “learning to inquire into one’s own practice is essential to becoming a teacher who is a life-long learner” (p. 192) and developing the habit of inquiry can improve practice in an organized way.

These studies found that using an inquiry-based approach motivated students because it encouraged increased student involvement. No studies were found that investigated the use of inquiry with nursing students. This dissertation sought to bridge that gap in knowledge by investigating how participants developed in their ability to use inquiry at higher stages through the use of the online clinical post-conference.

**Clinical Post-Conference**

After spending the day caring for patients, students traditionally meet for an important part of the clinical day, the clinical post-conference (Hamera & Wright, 2004; Hsu, 2007; Oermann, 2008; Wink, 1995). Clinical post-conferences evolved when nursing education moved out of service-based settings (hospital programs) into collegiate settings and are still universally used at the end of each undergraduate clinical experience. The clinical post-conference consists of an instructor and a group of students who meet away from the clinical environment to discuss the experiences of the clinical day (Wink, 1995).

**Benefits to Learning Provided by the Clinical Conference**

Clinical post-conferences play a vital role in helping students to make the necessary connections between classroom learning and clinical experiences (Cooper et al., 2004) and
encourage greater student learning by providing a forum for students to discuss what they experienced in clinical and to analyze clinical situations they have faced (Gaberson & Oermann, 2010). Clinical post-conference also are opportunities for clinical faculty to further assess student learning and performance (Reilly & Oermann, 1992). In addition, clinical post-conferences are debriefing experiences where students can reflect on their experiences—emotional and otherwise—of the clinical day (Horsfall, 1990) and can provide greater opportunities for student inquiry (Rossignol, 1997).

Debriefing, as part of a planned learning experience, provides the time and opportunity for learners to step back from the experience and to reflect on what they have learned (Pearson & Smith, 1985). The debriefing process consists of three stages. First, participants are asked to describe the events that occurred during their experience. Second, participants are asked to describe how they felt and to discuss personal feelings and reactions to the experience. For this stage to be successful, teachers must create an environment of trust and acceptance so that students feel safe enough to disclose their inner thoughts and feelings. In the third stage, participants are asked to explain what the experience means to them. This stage requires students to generalize from the experience, to recognize the new knowledge they have gained, and to achieve relevant (to them) meaning from the experience (Pearson & Smith, 1985). As debriefing experiences, clinical post-conferences provide good opportunities for students to engage in reflection-on-action.

Clinical post-conferences give students the time and opportunity to reflect back on their clinical day and to ask questions about the experiences in which they participated or observed (Horsfall, 1990). They also provide students the opportunity to evaluate and
critique care, to develop critical thinking and clinical decision-making skills, and to explore feelings and attitudes about nursing care (Wink, 1995).

Clinical post-conferences can include all types of learning—cognitive, affective, and behavioral—and give nursing students the opportunity to communicate with the instructor and with other students (Letizia, 1998). Mitchell and Krainovich (1982) delineated some further activities that are encouraged in the clinical post-conference. These include guiding students to solve problems, share clinical experiences, critique clinical activities, discuss clinical practice issues and concerns, and examine clinical decisions that were made. In clinical post-conferences, students also have the opportunity to work collaboratively with others in a group and to learn from the experiences of others (Oermann, 2008).

Hsu (2007) examined the behavior and interaction of faculty and students in clinical post-conferences. Her sample included a faculty of 10 nurses in a two-year nursing program at a nursing college in Taiwan and 50 students. A total of 20 post-conferences (two for each teacher) were examined. Data were collected via participant observation, taped transcripts, and field notes. Hsu looked at the responses of the students and the teacher-student interaction from the teacher perspective to determine the type of learning that occurred. Results of the study indicated that teachers asked only lower level (knowledge and comprehension) questions and that cognitive learning and a “task orientation” occurred most often. “Task orientation” was defined as those activities that focused only on subject matter and planned activities, such as reading the patient chart, discussing clinical experiences, and psychomotor skill practice. She concluded that nurse
educators should improve the purpose and outcome of post-conferences so students may grow and develop the ability to apply knowledge in practical situations, develop professional values, and improve their problem solving skills (Hsu, 2007).

**The Online Clinical Post-Conference**

Today is the age of technology. The generation born after 1980 (who make up the majority of today’s college students) has been described as “digital natives” (Bennett, Maton, & Kervin, 2008). They have always lived in a world where technology was omnipresent in their daily lives. They are comfortable using technology (i.e., computers, videogames, digital music players, videocams, cell phones, and many other “toys” of the digital age) and they use it to the fullest extent (Bennett et al., 2008). The online clinical post-conference provides a venue that digital native college students would find familiar and comfortable (Bennett et al., 2008).

Startling statistics show how prevalent technology is in our lives and in higher education. Studies by the U.S. Department of Education revealed that U.S. college students participated in more than 12 million online course enrollments during the 2007-2008 school year (Parsad & Lewis, 2008). Over 6.1 million American college students (31% of all higher education students) were enrolled in at least one online course in 2010 (Allen & Seaman, 2011). The percentage was even higher (33%) for those students who were married and had dependent children (Staklis, 2010).

**Benefits of Using Online Venues to Enhance Learning**

Since many students are engaging in online learning, it is beneficial to know what type of learning is achieved in online classes. Recent studies have shown that online
learning produces successful outcomes at least equivalent to, if not better than, traditional face-to-face classrooms. In a meta-analysis of 76 research studies, Tallent-Runnels et al. (2006) found that online classes were just as good as their face-to-face counterparts. They searched the ERIC, PsycINFO, ContentFirst, Education Abstracts, and WilsonSelect databases using the following keywords: online course and instruction, cyberspace course, computer-based course/instruction/learning, distance education, e-learning, online teaching, web-based teaching, Internet/teaching/instruction, computer assisted instruction, computer software instruction, telecourses, instructional technology in education, virtual learning, and distributed learning (p. 94). They found that online asynchronous discussions facilitated in-depth communication and that learning outcomes were the same as in face-to-face courses (Tallent-Runnels et al., 2006).

In addition, Means, Toyama, Murphy, Bakia, and Jones (2009) conducted a rigorous and comprehensive meta-analysis of 1,132 studies that compared online and face-to-face education for the U.S. Department of Education. These studies included education from all levels—K-12, career technology, corporate and military training, as well as medical and higher education—from all disciplines. Of these 1,132 studies, they selected the most careful and thorough 56 studies to examine further. From these studies, they determined that, on average, classes taught using online learning—either completely online or utilizing blended learning—produced superior student learning outcomes than do classes with only face-to-face instruction (Means et al., 2009).
Student Satisfaction With Online Venues in Nursing Classes

The use of Web-based technology in nursing education is the subject of a great deal of research in recent years. However, most of the research focused on whether nursing students in online courses were satisfied with this type of learning, and, in most of the studies, they stated that they were (Atack & Rankin, 2000; Babenko-Mould, Andrusyszyn, & Goldenberg, 2004; Cartwright, 2000).

A blended or “hybrid” course is one where students participate in online asynchronous discussions in addition to having face-to-face course meetings. Wu and Hiltz (2004) conducted a study on students in 3 blended courses (2 undergraduate and 1 graduate course). They found that online discussions definitely enhanced the students’ perceived learning and satisfaction. Althaus (1997) investigated whether adding an online asynchronous discussion to a face-to-face class increased academic performance. In a correlational study of 142 undergraduate students, he found that students who were involved in the online discussions earned higher grades than those who were not.

The Online Clinical Post-Conference as an Asynchronous Discussion Board

Advances in the field of computer technology provide nurse educators with various opportunities to use technology to enhance learning (Atack & Rankin, 2000; Billings, Connors, & Skiba, 2001; Kenny, 2002; Sole & Lundquist, 2001). One opportunity to enhance learning is the online clinical post-conference set up as an asynchronous discussion board. The asynchronous discussion board is the most common form of online communication used today in colleges and universities (Chan, Hew, & Cheung, 2009).
The asynchronous discussion board is a tool that creates an electronic dialogue by enabling each student in the class to post a message and to read and respond to the messages of other students (Markel, 2001). The posting of responses produces a threaded discussion where responses to a message are placed under the original message in a way that resembles face-to-face conversation (Al-Salman, 2010). In a threaded discussion, an original, open-ended question is posted; participants then respond with initial postings in response to the question. Replies to an original post are indented under the original post so that posters can follow along the discussion. Several topics can be discussed at the same time (Hazari, 2004; Wienicki, 2003).

**Advantages of the Asynchronous Discussion Board**

The online version of the clinical post-conference has several advantages over the traditional, face-to-face version of the clinical post-conference. The advantages include the use of written communication; convenience, flexibility, and control; development of higher level thinking; and promotion of collaborative learning (Atack & Rankin, 2000; Billings et al., 2001; Kenny, 2002; Sole & Lundquist, 2001).

**Use of written communication.** Participation in the online clinical post-conference requires that students write down their thoughts instead of speaking them. Written communication is more intricate and explicit than oral communication (Garrison, Anderson, et al., 2000). The written exchange of thoughts and ideas leads students to be more thoughtful and careful in their communication (Guthrie & McCracken, 2010) and encourages discipline and rigor in thinking and communicating (Garrison, Anderson, et al., 2000).
Having students write down their thoughts and feelings after an experience is one way to encourage them to reflect-on-action. Writing provides objectivity and clarity about a learning experience. Writing a description of the learning experience soon after the experience occurred allows learners to record it as it actually happened, not how they might later interpret that it happened (Boud et al., 1985). In addition, writing about an experience allows learners to acknowledge and name feelings that were present during the experience (Boud et al., 1985) and opens the doors of perception (Johns, 2004). Writing about experience facilitates reflection because it encourages people to make explicit the knowledge that is implicit in their actions (Schön, 1987).

Researchers have found that students were more apt to explore their feelings (Cooper et al., 2004) and tended to reflect more on their clinical practice by writing about it in online discussions as compared to speaking about it face-to-face (Hamera & Wright, 2004; Hermann, 2006; Kenny, 2002. Guthrie and McCracken (2010) studied 15 undergraduate students in non-nursing experiential based courses that included asynchronous online discussions. These courses consisted of on-site clinical placements in the community accompanied by online coursework. Students identified reflection as a new way of learning and stated that the online discussions were “better” than writing a reflective journal because the discussions encouraged the exchange of ideas with other students. As one student said, “when you share personal thoughts, it builds relationships” (p. 14). Rentmeester (2006) found that online discussion in online post-conferences encouraged the sharing of ideas in associate degree nursing students. Hermann (2006), in her study of
associate degree nursing students, found that the students’ level of reflection was “deeper and more meaningful” (p. 191) than the levels shown in a face-to-face post-conference.

Although these researchers found that the online clinical post-conference encouraged nursing students to reflect on their clinical experiences, none stated specifically how they measured the levels of reflection and none utilized baccalaureate nursing students. This study determined the stages of reflection displayed by baccalaureate nursing students in postings to the online clinical post-conference.

Finally, the written communication of the asynchronous discussion board of the online clinical post-conference provides both students and faculty with a permanent record of what was discussed. The experience as it actually happened is preserved so that the learner can return to it later (Boud et al., 1985). The student can refer to the record for reflection and the faculty can analyze the record for evidence of student thinking (Guthrie & McCracken, 2010)

Convenience, flexibility, and control. A second advantage of the online clinical post-conference over the face-to-face version is that online discussions offer students convenience, flexibility, and control of the learning process. In the online clinical post-conference, students have 48 hours after the completion of a clinical experience to participate in the online clinical post-conference. Online discussions are always accessible to students (Kenny, 2002) and students can post at any time during day or night. Participation, therefore, occurs at the students’ convenience in the time and place that they choose, when they are not hurried and exhausted from a long clinical day.
Online discussions also allow the interaction of students who are geographically distant from one another (Atack & Rankin, 2000; Cartwright, 2000; Roehm & Bonnel, 2009).

Most importantly, online discussions allow time for students to reflect and think more objectively and carefully before contributing to the discussion (Garrison, 2003; Posey & Pintz, 2006). They have time to formulate their thoughts, which provides increased flexibility in meeting the students’ educational needs (Babenko-Mould et al., 2004).

In this manner, the asynchronous online discussion gives students a sense of control over their learning (Babenko-Mould et al., 2004). Teikmanis and Armstrong (2001), in a study of students in a baccalaureate pathophysiology course, found that online asynchronous discussion promoted a shift to student-centered learning. In other studies, students taking online courses felt that they assumed more responsibility for their own learning (Atack & Rankin, 2000; Cartwright, 2000).

**Development of higher level thinking.** Another advantage of the online clinical post-conference is that asynchronous discussions promote the development of higher level thinking (Cooper et al., 2004). The online learning environment encourages students to participate in critical discourse (Atack & Rankin, 2000; Billings et al., 2001; Kenny, 2002; Sole & Lundquist, 2001) and has been linked with the development of critical thinking (Daroszewski et al., 2004; Garrison, Anderson, et al., 2000).

As related to critical discourse, online asynchronous discussion boards stimulate thoughtful, serious discussion and debate among class members (Pinch & Graves, 2000). Reading of others’ experiences and responding in an online discussion board encourages discussion that accomplishes more than just fulfilling the course objectives (Daroszewski
et al., 2004). Garrison (2003) agreed and stated that asynchronous discussions encourage students to consider their own and others’ perspectives. He stated that the online education venue “nurtures independent thinkers in an interdependent collaborative community of inquiry” (p. 47).

In addition to promoting critical discourse, online discussions enable students to apply previously learned principles to their clinical practice (Cooper et al., 2004; Garrison, Anderson, et al., 2000; Greenlaw & DeLoach, 2003). Online discussions also assist students in making the theory-practice connections that are so necessary to providing excellent nursing care (Guthrie & McCracken, 2010; Hamera & Wright, 2004; Hermann, 2006; Kenny, 2002; Rentmeester, 2006).

**Promotion of collaborative learning.** Online asynchronous discussion of the online clinical post-conference is an excellent way of encouraging active, collaborative learning (Halstead, 2005) and truthful, respectful interactions and communications between peers (Guthrie & McCracken, 2010). Collaborative learning is emphasized today so that nurses will be prepared to use teamwork to deal with the complicated and confusing real-world problems that they will face in practice (Cartwright, 2000). For collaborative learning to take place, students must cooperate with and communicate with each other.

In a meta-analysis of 19 relevant studies in the United Kingdom, Carroll, Booth, Papaioannou, Sutton, and Wong (2009) found that a major part of the online course was the quality of the interaction (asynchronous online discussion) between the learners. This interaction between learners resulted in the high outcomes of learning that occurred in
online classes. In addition, participants in classes that included online discussions were generally positive about the experience of peer interaction (Carroll et al., 2009).

Asynchronous discussions promote the collaborative aspects of education and quality of interaction because all students have equal access to the discussions and student roles are equalized (Meyer, 2004). In a face-to-face setting, discussions can be dominated by a few vocal students while the shy students may say little. Research has shown that online asynchronous discussion engages students more effectively and increases individual student participation because all students have an equal opportunity to participate (Cooper et al., 2004; Pinch & Graves, 2000). In the online asynchronous discussion, because responses are individually posted, everyone must contribute to the discussion (Meyer, 2004). Kenny (2002) and Hermann (2006) both found similar results in their studies of nursing students. In Kenny’s (2002) study, online discussion boards were found to provide a venue for the equal participation of all students in the class and students were able to post their views and opinions without restraint on the topics that were discussed. Hermann (2006) found that all students contributed to the online discussion, whereas in a face-to-face post-conference, a few students dominated the discussion.

Along these same lines, Rocco (2010) examined the online postings of 34 students in a teacher education program. These weekly postings consisted of student reflections and replies on an asynchronous discussion board. The reflections were public in that the teacher and all members of the class would read them. She found that students were more likely to talk directly with one another, to share experiences and ideas, to disclose thoughts about reading in-class activities, and to discuss implications for practice. In this same
study, Rocco also determined that students gained confidence by responding respectfully and substantively to others (Rocco, 2010).

Hermann (2006) discovered comparable results indicating collaborative learning in her study of eight freshman associate degree nursing students. She compared outcomes from an online clinical post-conference and a regular face-to-face one. Students were asked to post their comments within one week of the clinical experience and to respond to their peers twice over the course of six weeks. Students stated that, in reading the postings of their fellow students, they felt that they were not alone. Hermann advised that more studies are needed to identify other learning outcomes that could be met through the online clinical post-conference.

In addition to encouraging more student participation in online discussion, the online clinical post-conference also creates opportunities for students to engage in learning by mentoring each other (Daroszewski et al., 2004). Cartwright (2000) noted that effective group dynamics and student mentoring occurred in an undergraduate course on nursing and health policy. Students became resources for each other and learned from each other by sharing experiences.

This researcher observed students mentoring each other in her own classes that used the online clinical post-conference. Participating in the online discussions that included reading about, and responding to, other students’ experiences enabled students to learn from each other, to solve problems by sharing insights they had gained, and to give each other much-needed support.
Use of the Asynchronous Discussion Board in Clinical Nursing Classes

Although studies were found that examined the use of asynchronous discussion boards in undergraduate nursing education, most of those studies examined students in non-clinical courses and found benefits similar to those found in studies of students in other academic disciplines. It was only recently that studies examined the use of the asynchronous online discussion board in clinical nursing courses. A clinical nursing course is one that includes an experiential clinical experience in a community health care facility in addition to a classroom experience.

Although sparse, most of this nursing research conducted using clinical courses utilized graduate students (Elfrink et al., 2000). Wambach et al. (1999) studied rural-based nurse practitioner students and found that asynchronous discussion boards produced discussions that were “insightful.” Iwasiw et al. (2000), in a study of a graduate nursing leadership and health care course, found that computer conferencing produced discourse that was rich and substantive and the students showed evidence that they were able to think critically about nursing.

Daroszewski et al. (2004) conducted a study on six advanced practice nursing (APN) students who were enrolled in a master’s level community health course. In an attempt to get students to increase sharing of their clinical experiences, they incorporated an asynchronous online journaling system into the course. This was designed to give students time to analyze and reflect before recording their thoughts on their clinical experiences and on the listed discussion topics. The study examined how students evaluated the experience of the online journal using a Likert-style journaling evaluation
tool. All six participants perceived online journaling to be highly effective and valuable. Themes in student postings indicated that the online journal supported “discussion, mentoring, critical thinking, and socialization in APN clinical education” (p. 178).

Very few studies were found that examined the use of web discussion in a clinical (non-graduate level) nursing course. One study assessed work-based learning in vocational, practical nursing education, not professional baccalaureate nursing education (Hulkari & Mahlamaki-Kultanen, 2008). Hulkari and Mahlamaki-Kultanen studied how web discussion could be used to measure the processes of vocational growth, learning, and reflection. The results of their study indicate that web discussion provided beneficial information about the learning processes of the vocational students and was an effective way to evaluate reflective thinking. As described earlier in this paper, a few other studies looked at various aspects of using asynchronous discussion boards with associate degree nursing students (Cooper et al., 2004; Hamera & Wright, 2004; Hermann, 2006; Kenny, 2002; Rentmeester, 2006).

Only one study was found that examined the use of an asynchronous discussion board in a clinical course with undergraduate baccalaureate nursing students. Babenko-Mould et al. (2004) studied a group of senior undergraduate nursing students to see how the addition of an online discussion board influenced their self-efficacy and how students rated computer conferencing as a teaching method. They found that participation in online conferencing as part of a clinical practicum course promoted an atmosphere of community and encouraged students to connect, support, share and learn together. The
computer conference supplied an excellent forum for student discussion (Babenko-Mould et al., 2004).

Summary

Chapter 2 explored how reflection, inquiry, and the online clinical post-conference are important to learning and especially to the learning of baccalaureate nursing students. Reflection is the process that makes it possible to learn from experience (Dewey, 1938; Schön, 1987). Reflection is an active process that requires students to analyze their learning in terms of their own experiences, biases, values, beliefs, opinions, and attitudes; it allows learners to seek solutions to problems from many different perspectives by assisting them to examine their assumptions and expectations and to expand their thinking to be more inclusive, open, discriminating, and flexible (Boud et al., 1985; Mezirow, 1990). Professionals use reflection to look back on their experiences and to learn from them, to analyze what worked and what did not work and to change their practice in positive ways (Schön, 1987).

Inquiry is the process of asking the right questions and then going about the business of seeking answers to those questions. Determining the right questions to ask is essential to the development of critical thinking, creativity, and higher-level thinking (Hsu, 2007). Inquiry-based education is seen as a method of improving the education of college students because it encourages more student-directed and interactive ways of learning. The pedagogy also teaches students how to learn (Justice et al., 2009) and helps students gain a deeper knowledge of the world because they are investigating what is meaningful to them (Furberg, 2009; Kroll, 2005).
Clinical post-conferences play a vital role in helping students to make the necessary connections between classroom learning and clinical experiences (Cooper et al., 2004), are opportunities for clinical faculty to further assess student learning and performance (Reilly & Oermann, 1992), are debriefing experiences where students can reflect on their experiences (emotional and otherwise) of the clinical day (Horsfall, 1990), and can provide greater opportunities for student inquiry (Rossignol, 1997).

The use of Web-based technology in nursing education has been the subject of a great deal of research in recent years. Much of it, however, has focused on whether students in online courses learn as well as students in face-to-face courses or if they are satisfied with online classes. Use of an asynchronous discussion board has been shown to have many advantages, such as providing equal access for all students, giving time for students to reflect before posting, encouraging students to make the necessary theory-practice connections, and encouraging the development of critical thinking in nursing students (Cooper et al., 2004; Garrison, Anderson, et al., 2000; Greenlaw & DeLoach, 2003; Guthrie & McCracken, 2010; Hamera & Wright, 2004; Hermann, 2006; Kenny, 2002; Rentmeester, 2006).

Very few studies were found that investigated the use of an online clinical post-conference with baccalaureate nursing students. None investigated the use of reflection and inquiry in nursing education and sought to discover whether students developed in their ability to use reflection and inquiry at higher stages through the use of the online clinical post-conference. This study helped to fill that void. The next chapter describes the methodology that was used to conduct this study.
CHAPTER III
METHODOLOGY

Chapter 3 describes the methodology used to conduct the study. The goal of this study was to describe how participants developed in their ability to utilize reflection and inquiry through the use of the online clinical post-conference. Reflection and inquiry displayed in the online clinical post-conference was studied to investigate a new pedagogy and a way to reconceptualize clinical nursing education.

The research questions that guided this study were:

1. What stage of reflection do participants exhibit when using an online post-conference and do those stages increase over time?

2. What stage of inquiry do participants exhibit when using an online post-conference and do those stages increase over time?

Chapter 3 is organized into seven sections: (a) theoretical framework, (b) design of the study, (c) study procedures, (d) data collection procedures, (e) data analysis, (f) ensuring trustworthiness, and (g) ethics. The chapter ends with a summary.

Theoretical Framework

The theoretical framework used to answer the research questions included a descriptive interpretive qualitative methodology (Merriam, 2002), Boud et al.’s (1985) model of the reflective process, and Garrison, Anderson, and Archer’s (2000, 2001) practical inquiry model. This section first discusses the selection of a qualitative research design for the study, then describes descriptive interpretive methodology and offers a
rationale for selection of the methodology. Finally, the reflective process model and the practical inquiry model is discussed.

**Qualitative Research**

A qualitative research methodology was selected for this study because qualitative research is exploratory and descriptive in nature (Creswell, 2009). A main contention of qualitative research is that people construct meaning by interacting with others and with their worlds (Merriam, 2002). It is research into experience-as-lived and of people’s everyday lives (Magilvy & Thomas, 2009). Merriam (2002) stated that a qualitative study endeavors to understand a phenomenon, a process, or the perspectives of people in situations. This study examined how participants developed in their ability to use reflection and inquiry at higher stages by engaging in the online clinical post-conference.

Qualitative research is research in a natural setting, hence it is said to be naturalistic in nature (Patton, 2002). This means that qualitative research takes place in real-world settings and the researcher does not attempt to manipulate the phenomenon of interest like one would do in a quantitative study. The phenomenon of interest in a qualitative study unfolds naturally with no predetermined course established by the researcher as would occur in a laboratory or some other controlled setting (Patton, 2002). Following a naturalistic approach, this study took place in the learning settings of the participants, which were various health care facilities in which participants completed clinical experiences.
The Basic Descriptive Interpretive Qualitative Approach

Basic descriptive interpretive qualitative research is the fundamental type of qualitative research (Merriam, 2002). The strength of descriptive qualitative research is its ability to open human experience to verbal representation (Magilvy & Thomas, 2009) and its purpose is to provide a rich, detailed depiction of the phenomenon or process that is being studied (Bogdan & Biklen, 1998). Sandelowski (2000) stated that qualitative descriptive studies produce a “comprehensive summary . . . in everyday terms” (p. 336). In qualitative studies, discourse is important and the role of the researcher is to interpret and represent the information (Creswell, 2009). Descriptive research will answer the question “what is there?” but there can be no understanding without interpretation (Angen, 2000). The interpretive aspect of qualitative research attempts to answer the question “what does it all mean?” (Sandelowski, 2011). Interpretation builds on description to enlarge and deepen understanding of human experience through the use of language (Angen, 2000).

Basic descriptive interpretive studies gather and analyze thick data sources in order to develop an understanding of the intricacies of a particular situation or process (Willis, 2007). For this study, the particular processes analyzed were those of reflection and inquiry. Interpretation of the data was undertaken to determine the different stages of reflection and inquiry participants displayed in the online clinical post-conference.

The descriptive interpretive framework was selected as the best choice to answer the research questions in this study because it enabled the researcher to determine how participants were making meaning of their clinical experiences through the use of reflection
and inquiry. Discourse of the participants engaging in the asynchronous discussion board of the online clinical post-conference was central to the study. Specifically, the framework allowed analysis of the manner participants utilized reflection and inquiry and the extent to which they improved in the stages of reflection and inquiry as displayed in postings to the online clinical post-conference.

Other Approaches to Qualitative Research Not Selected

Basic descriptive interpretive qualitative research is different from the other approaches of qualitative research in that the other qualitative approaches have an additional purpose than just describing and analyzing data. A discussion of the other qualitative research approaches and the rationale for why they were not selected for my study follows.

Phenomenology. Phenomenology is a qualitative research approach in which the researcher attempts to find the essence of human experience underlying a phenomenon and to understand the lived experiences of people through interpretation and analysis of descriptions of those experiences (Creswell, 2009). Phenomenological studies show how complex meaning is built out of simple units of human experience (Merriam, 2002). A small number of participants are studied extensively through prolonged engagement to determine patterns of meaning (Creswell, 2009). Phenomenology was not selected as a research method for this study because the research study required a more expansive focus for examining the processes of reflection and inquiry; it did not examine a specific phenomenon that was occurring in the lives of participants.
**Grounded theory.** The goal of a grounded theory research study is to develop, through an inductive process, a theory that is “grounded” in the data (Merriam, 2002). The theory obtained from grounded theory research is substantive theory, which means that it is localized and deals with particular real-world situations of participants as opposed to a grand or formal theory (Merriam, 2002). The grounded theory research process is complex and includes many stages of data collection over extended periods of time as well as a continuous refinement of categories of information and the theoretical sampling of different groups to ensure an accurate determination of the similarities and differences of information (Creswell, 2009). Grounded theory was not selected as the methodological design for this study because theories of reflection and inquiry are available to frame this study and time and resources were limited.

**Case study.** Case studies provide an in-depth description and analysis of a phenomenon or social unit. The key determination of a case study is the “case” which is bounded, integrated system; the case can be an individual, group of people, a school, a community, or an organizational policy (Merriam, 2002). A particular system is selected to be the case because it is typical, unique, or highly successful; the case then becomes the unit of analysis (Merriam, 2002). Case studies are bounded by time and activity, and case study researchers gather detailed information using a variety of data collection techniques over a sustained period of time (Creswell, 2009). The case study design was not selected for this study because the unit of analysis did not constitute a bounded system, or case.
**Ethnography.** Ethnography is a qualitative research approach that seeks to understand the culture of the individuals being studied (Merriam, 2002). Ethnography researchers study an entire, intact cultural group in their natural setting over a prolonged period of time (Creswell, 2009).

Ethnographies interpret and describe these shared patterns of behavior (Rubin & Rubin, 2005). Ethnographies are not characterized by the way that data is collected, but by the sociocultural lens that is used to interpret the data (Merriam, 2002). Ethnographic studies usually require years of study and data collection conducted in the foreign and exotic cultures (Merriam, 2002). Ethnography was not selected as a research methodology for this study because the research questions did not deal with culture.

**Narrative analysis.** Narrative analysis is a qualitative approach that studies the lives of people from their perspective, using the stories that they tell about their lives as the data source (Merriam, 2002). Other terms for the narrative analysis type of research are: biography, autobiography, life history, oral history, autoethnography, and life narrative (Merriam, 2002).

Narrative analyses can be conducted using three different strategies to analyze the stories: psychological, biographical, and discourse analysis (Merriam, 2002). In the psychological approach, the story is examined looking at internal thoughts and motivations. The biographical approach concentrates on class and family origins while discourse analysis scrutinizes the story for its component parts and to determine the meaning in the text (Merriam, 2002). Narrative analysis was not selected as a
methodology for this study because the purpose of this study design was not to examine the stories of peoples’ lives.

**Model of the Reflective Process**

Boud et al.’s (1985) model of the reflective process was chosen for this research as part of the theoretical framework because it provided a clear description and categorization of the key elements and stages of the process of reflection as it is used in learning. Boud et al.’s model of the reflective process defines reflection as a form of response to experience. The model includes two main components, the experience and reflective activity based on the experience. Boud et al.’s model describes an experience as a situation or event and reflection as the process that occurs when people recapture the experience and think about it for the purpose of re-evaluating it. The end result of the reflective process is the development of a new perspective or changed behavior (Boud et al., 1985). The seven elements of the reflective process, which are also described as the stages of the reflective process, outlined by Boud et al.’s model are: return to experience, attend to feelings, association, integration, validation, appropriation, and outcome of reflection. These stages were used in this study as measures of the stage of the reflective process displayed in participant postings to the online clinical post-conference. Comparing stages over time showed how participants developed in their ability to utilize reflection.

Stage 1 (returning to experience) is simply a recollection and description of the experience or a replay of the events that occurred. Postings evidencing this stage of the reflective process would describe what participants were thinking about, what they
noticed during their clinical day, and what they felt was important enough to remember and comment on after their clinical experience. Stage 2 (attending to feelings) consists of using the positive feelings that were produced by the experience and removing or dealing with negative or obstructive feelings (Boud, et al., 1985). Because nursing involves a high degree of human interaction, and therefore emotions and feelings, postings enabled the researcher to see how participants handled the many feelings they experienced during their clinical experiences, to understand how feelings affected their learning, and to determine how participants felt about themselves and the experience as a whole.

In stage 3 (association), reflectors relate new information to what they already know (Boud et al., 1985). In this manner, participant postings evidencing stage 3 illustrate how participants linked new knowledge with what was previously learned in class or if participants just took new information at face value.

In stage 4 (integration), people seek to recognize new relationships in what they have learned (Boud et al., 1985). Participants in stage 4 of the reflective process show evidence that they sought relationships that were observed through association or drew conclusions and arrived at insights; these activities represent higher-level thinking and reflective ability (Chirema, 2007).

During stage 5 (validation) of Boud et al.’s (1985) model of the reflective process, reflectors test new ideas for internal consistency. They attempt to determine the accuracy and legitimacy of ideas and feelings that were produced by the experience. In stage 6 (appropriation), reflectors internalize the new knowledge they have gained and make it part of their own repertoire (Boud et al., 1985).
The final aim of the reflective process and last stage of Boud et al.’s (1985) model is the outcome of reflection stage, which includes a change in attitude or behavior and a commitment to action. In this final stage, the reflector has experienced a new perspective and has learned a new way of doing something, developed a new skill, or gained resolution to a problem (Boud et al., 1985). This stage is important because Boud et al. (1985) suggested that the benefits of reflection could be lost if not linked to action.

Boud et al.’s (1985) model of reflection was used in this study to analyze how participants utilized reflection and what stages of the reflective process were displayed by the participants in their postings to the online clinical post-conference. Previous studies by Wong et al. (1995) and Chirema (2007) both used Boud et al.’s (1985) model in their studies of post-registration nursing students with good results. Both studies found that the model was an appropriate way to analyze for evidence of the stages of reflection.

**Practical Inquiry Model**

Garrison, Anderson, and Archer (2000, 2001) developed the Community of Inquiry (CoI) framework to describe the dynamics of integrating technology and pedagogy in asynchronous learning networks to create effective online educational experiences. The CoI model states that knowledge construction using online technology can be encouraged through the three elements of social, teaching, and cognitive presence (Shea & Bidjerano, 2008). In the model, social presence is defined as the ability of learners to present themselves socially and emotionally in electronic communication so that they are perceived as real people (Garrison & Arbaugh, 2007). Teaching presence describes the design,
facilitation, and direction of online learning opportunities so that they produce meaningful and worthwhile learning outcomes (Garrison & Arbaugh, 2007).

Cognitive presence is defined as the extent to which learners are able to construct and confirm meaning through sustained reflection and online discourse and is closely associated with critical thinking (Garrison & Arbaugh, 2007). Critical thinking is the basis for clinical decision-making, and nurses must be able to think critically to provide effective care for as they care for complex patients (Simpson & Courtney, 2002).

In the CoI model, cognitive presence is presented as practical inquiry, which includes four phases (or stages) of the practical inquiry process. The four stages are: state of dissonance, exploration, integration, and resolution (Garrison, Anderson, et al., 2000, 2001). The practical inquiry model (PIM) was selected for this study because it was created for use in online classes and is particularly suitable for determining the quality of asynchronous discussions (Liu & Yang, 2012). In addition, the PIM provides a clear description of the different stages of the inquiry process and the stages of practical inquiry elicit higher-order thinking skills, especially critical thinking (Garrison, Anderson, et al., 2000, 2001).

The four stages of inquiry, as outlined in the PIM (state of dissonance, exploration, integration, and resolution), were used in this study to determine the stage of inquiry displayed by participants. The first stage of the model, state of dissonance, has been described as a feeling of unease that is produced by some triggering event in the experience of the student that produces a dilemma or problem (Garrison, Anderson, et al., 2000, 2001). Postings evidencing this stage described why participants asked the questions they did. In
the next stage, exploration, people explore available resources as they search for information, knowledge, or alternatives that might be helpful in solving their problem. Postings evidencing this stage described the process of how participants sought to answer the questions they asked.

In the third stage of the PIM, integration, people attempt to look for insights and to integrate knowledge and information they gained into a coherent thought or view (Garrison, Anderson, et al., 2000, 2001). Postings evidencing the integration stage described how participants attempted to answer their questions. The fourth and final stage of the practical inquiry process results in the resolution of the issue and solution to the problem. Postings evidencing this final stage described an answer or solution that was gained or statements which demonstrated that coherent learning took place.

**Design of the Study**

**Research Site**

This research study was conducted within the Kent State University College of Nursing (KSU CON) at the Salem campus. Kent State University is a public research university located in Northeast Ohio and is the second largest public university in Ohio in terms of student enrollment (Fredmonsky, 2010). The KSU CON has been ranked as the fourth largest nursing school as well as the largest residential nursing program in the United States (Modern Healthcare, 2010). It is accredited by the American Nurses Association (ANA), the Commission on Collegiate Nursing Education (CCNE), and the National League for Nursing (NLN).
The whole network of Kent State University is comprised of eight campuses. These include a main campus in Kent, Ohio, and seven regional campuses, with the Salem campus being one of these regional campuses. The curriculum leading to the baccalaureate degree in nursing is taught at the KSU Kent campus and four of the regional campuses, including the Salem campus.

This site was selected for the study because the researcher is on the faculty of the KSU CON at the Salem campus and has implemented this innovative approach of an on-line venue for the clinical post-conference. In addition, she was interested in improving the process of her teaching and the pedagogy within the nursing program and other nursing faculty members were interested in partnership in this study.

**Selection of Participants**

The purposive sample for a qualitative research study should be selected from participants who could provide the richest data (Merriam, 2002). Participants for this study were selected from the roster of nursing students enrolled in two successive senior-level clinical courses in the baccalaureate nursing program at the Salem campus of Kent State University. These courses were *Nursing of the Critically Ill* and *Integration of Leadership and Management*, which met in the Fall semester of 2011 and the Spring semester of 2012 sequentially.

These senior-level nursing courses were selected specifically because by this point in their student careers, students in these classes would have had a solid foundation in nursing theory and some clinical experience. The selected courses, as two of the last clinical courses that nursing students take before graduation, provided a rich environment
in which to gauge how students will practice as nurses when they graduate. In the *Nursing of the Critically Ill* course, students practiced within a structured learning environment where their instructor was present the entire time on the clinical unit. In the *Nursing Leadership and Management* course, students were afforded more independence because they were placed one-on-one with practicing nurses acting as preceptors.

**Recruitment Procedures**

The researcher recruited participants for the study by sending an email to all students on the roster of the *Nursing of the Critically Ill*, the first of these two nursing courses, asking for volunteers to participate. The email stated that participants would receive an introduction to, and additional instruction in, the concepts and stages of reflection and inquiry. The email also stated that participants would be asked to engage in the online clinical post-conference in the *Nursing of the Critically Ill* course as well as the *Nursing Leadership and Management* course that would immediately follow. The email stressed that participation in the study was voluntary and would not affect the participant’s course grade or progression in the nursing program. A transcript of this recruitment email is included in Appendix A.

Any student interested in participating was asked to reply by email to the researcher. The researcher met with those students, explained the aims of the study as well as its risks and benefits, answered questions, and had participants sign an informed consent form, which is included in Appendix B. Participants were informed that they had the right to withdraw from the study at any time without penalty.
Sample Demographics

Participation in online discussions is a key part of online learning. The level of participation in online courses has been shown to positively affect learning, achievement, and satisfaction (Hrastinski, 2008). Godwin, Thorpe, and Richardson (2008) found that learner characteristics which affected participation in online discussions included age, gender, and previous online experience. Generally, those who participated more often in online courses were younger, were female, and had more online experience.

In this study, to obtain baseline descriptive data on participant characteristics, participants were asked to complete the Demographic Data Sheet, which is located in Appendix C. Specific information regarding characteristics that might influence participation in the online discussion was obtained. The demographics of the sample are displayed in Table 1, which provides an overall view of the descriptive characteristics of the participants relevant to this study. Participants in the study are identified only by pseudonyms.

The study’s sample consisted of eight students—six females and two males—who were enrolled in a baccalaureate nursing program. Participants ranged in age from 24 to 34 years of age. All were senior students in a baccalaureate nursing program, with between four and eight years of college education. Sara, Stephanie, and Louise graduated in December 2011 after the Nursing of the Critically Ill course and the other five (Bob, Daniel, Veronica, Ann, and Marie) went on to graduate in May 2012, after taking the Nursing Leadership and Management course. Thus, the first phase of the study was completed with eight participants; the second phase included five participants.
Table 1

*Descriptive Characteristics of Participants*

<table>
<thead>
<tr>
<th>Participant Pseudonyms</th>
<th>Gender</th>
<th>Age</th>
<th>Years of College Education</th>
<th># of online courses taken</th>
<th>Comfort using online discussion</th>
<th>Graduation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sara</td>
<td>F</td>
<td>34</td>
<td>6</td>
<td>6</td>
<td>Very</td>
<td>Dec. 2011</td>
</tr>
<tr>
<td>Stephanie</td>
<td>F</td>
<td>28</td>
<td>4</td>
<td>4</td>
<td>Very</td>
<td>Dec. 2011</td>
</tr>
<tr>
<td>Louise</td>
<td>F</td>
<td>27</td>
<td>6</td>
<td>2</td>
<td>Somewhat</td>
<td>Dec. 2011</td>
</tr>
<tr>
<td>Bob</td>
<td>M</td>
<td>24</td>
<td>5</td>
<td>8</td>
<td>Very</td>
<td>May 2012</td>
</tr>
<tr>
<td>Daniel</td>
<td>M</td>
<td>24</td>
<td>6</td>
<td>4</td>
<td>Highly</td>
<td>May 2012</td>
</tr>
<tr>
<td>Veronica</td>
<td>F</td>
<td>24</td>
<td>6</td>
<td>5</td>
<td>Very</td>
<td>May 2012</td>
</tr>
<tr>
<td>Ann</td>
<td>F</td>
<td>24</td>
<td>6</td>
<td>3</td>
<td>Fairly</td>
<td>May 2012</td>
</tr>
<tr>
<td>Marie</td>
<td>F</td>
<td>26</td>
<td>8</td>
<td>5</td>
<td>Very</td>
<td>May 2012</td>
</tr>
</tbody>
</table>

Participants stated that they had taken between two and eight online courses in the past, and described varying levels of comfort (from *somewhat* to *very*) in recording their responses to discussion questions in the online discussion format. Louise had the least experience with online courses and she described herself as only somewhat comfortable in using online discussions. Bob had the most experience with online courses (8) and he stated that he felt very comfortable with online discussions.

Sara, at 34 years old, was the oldest participant. She had six years of college experience, had previously taken six online courses, and described herself as being very comfortable with online discussions. Sara was a dedicated learner and approached her learning in an organized and deliberate manner. She always seemed willing to do
whatever was necessary to excel in her classes. She graduated in December 2011 after taking the *Nursing of the Critically Ill* course.

Stephanie was a 28 year-old student who grew up in Tanzania and came to the United States to complete her education. She had completed four years of college education and had taken four online courses. She stated that she was very comfortable with online discussion. She graduated in December 2011 after taking the *Nursing of the Critically Ill* course.

Louise, age 27, had the least amount of experience with online learning. Although she had six years of college education, she had only taken two online courses previous to this study and she described herself as only somewhat comfortable with online discussions. She graduated in December 2011 after taking the *Nursing of the Critically Ill* course.

Bob was 24 years old. He had completed five years of college education at the time of the study and had taken eight online courses. He described himself as being very comfortable participating in online discussions.

Daniel was 24 years old and had six years of college education. He had pursued another major before entering the nursing program and had taken four online courses before entering this study. He described himself as being highly comfortable in recording his thoughts to discussion questions on the computer.

Veronica, 24 years old, had six years of college and, before this study, had taken five online courses. She described herself as being very comfortable with online discussion.
Ann was 24 years old and previously to this study, she had only taken three online courses. She described herself as being fairly comfortable in recording her thoughts in an online discussion.

Marie, at 26 years of age, had eight years of college education and had taken six online courses. She described herself as being very comfortable with online discussion.

**Risk to Participants**

Approval to conduct this study was obtained from the Kent State University Institutional Review Board (IRB). All provisions in the approval document were followed. There were no risks or discomfort other than that of daily life for participants in this study. Normally, participation in a clinical post-conference does not affect the course grade of the students because student scores on the course exams determine the grade received in the course. The clinical portion of the course is graded as satisfactory/unsatisfactory and is based on student performance during the clinical experience; clinical grades are assigned by the clinical faculty person. The researcher was not the main course instructor for either course in which the participants were enrolled during the study and was not responsible for assigning grades.

**Sources of Data**

Merriam (2002) stated that three major sources of data are commonly used in a qualitative study—interviews, observations, and artifact (document) analysis. For this study, multiple data collection sources were chosen by ascertaining which would provide the richest information to answer the research questions. The data sources included artifact analysis (the transcripts of participant postings to the online post-conference), participant
interviews, and research memos the researcher made during the study. Postings to the online clinical post-conference were collected weekly and included original postings by each participant as well as responses to the original posts. Personal interviews were conducted twice, once at the end of the Nursing the Critically Ill course and once at the end of the Nursing Leadership and Management course. Research memos were created weekly. Observations were not included as a data collection instrument because of the nature of this study. Observations involve watching how participants behave in certain situations (Merriam, 2002). Reflection and inquiry are best determined by what participants say about what they are thinking. It was determined that data indicating participant reflection and inquiry were best collected by analyzing their artifacts (postings to the online clinical post-conference), through participant interviews, and through research memos.

Artifacts

Artifact analysis was the primary method of collecting data. Artifacts are the “intended and unintended residues of human activity” and they “give alternative insights into the ways in which people perceive and fashion their lives” (Hatch, 2002, p. 24). Aronson (2011) stated that the construction of an artifact demonstrates a commitment to learning and fosters ownership of the experience. The process of creating artifacts also promotes thinking and provides opportunities for participants to receive feedback (Aronson, 2011).

The artifacts used in this study were the transcripts of the postings participants made to the online clinical post-conference asynchronous discussion board. Participants
were instructed to describe reflections and inquiries about their clinical experiences. The transcripts were a rich source of data because these participant-written reflections and postings provided access to the participants’ own words as they described their reflections and inquiries and displayed the essence of what participants were thinking as they created their postings.

The online clinical post-conference was a means of electronic communication that utilized an asynchronous discussion board. An asynchronous discussion is one where contributors do not have to be online at the same time. Participants are able to view responses and reply at the time of their choosing (Wilson & Fairchild, 2011). In the asynchronous discussion board, postings are “threaded,” meaning that participants post their original thoughts under the main heading of the week and then respond to other participants’ postings, thereby creating a discussion. These responses are indented under the original postings—forming a “tree” of responses—which allows the original response to be referenced in subsequent responses (Cox & Cox, 2008). Each original post and the responses to it becomes a “thread.” Multiple conversation threads could be carried on at the same time (Wilson & Fairchild, 2011). Participants were required to post their reflections and inquiries to the asynchronous discussion board weekly, read the postings of the other participants, and respond to at least two other participants’ postings.

Participant Interviews

Participant interviews provided another source of data for the study. An interview is an extended conversation between researcher and participant (Rubin & Rubin, 2005). Interviews are used to understand participants’ interpretations of the experiences and events
that happened in their lives (Rubin & Rubin, 2005) and provide information that reflects the viewpoint of the participant (Creswell, 2009). The goal of the interview is to achieve a deep, solid understanding of what is being studied (Rubin & Rubin, 2005). Interviews were chosen as a data collection method for this study because they enabled the researcher to gain participant perspectives about how they engaged in reflection and inquiry using the online clinical post-conference.

While participant postings were examined to determine the stage of reflection and inquiry displayed each week and to determine if those stages increased over time, interviews provided data to answer the study’s research questions because they explored participant viewpoints regarding how the online clinical post-conference encouraged them to use reflection and inquiry.

Each participant was interviewed twice—eight participants were interviewed at the end of the Nursing the Critically Ill course and the five participants that continued with the study were interviewed again at the end of the Integration of Leadership and Management in Nursing course for a total of 13 interviews. Interviews lasted about one hour each and were conducted over a three-day period during the last week of each semester.

The semi-structured, open-ended interviews were conducted one-on-one and face-to-face. Face-to-face interviews were used because they are more prone to produce richer and more in-depth data than those conducted by email or in focus groups (Rubin & Rubin, 2005). The semi-structured interviews consisted of both pre-determined structured and unstructured follow-up questions (Merriam, 2002). The unstructured questions were designed to be open-ended because they afforded the participants more
freedom and opportunity to display creativity in responding to the questions (Sowell & Casey, 1982). Follow-up open-ended questions in each interview were different for each interview because they were designed to elicit the views and opinions of participants and allowed the probing of certain answers to elicit more information. Questions used for the interviews are included in Appendix E and Appendix F.

Research Memos

Research memos kept by the researcher were the third data source used in the study. These descriptive and reflective research memos ensured that the data were accurate and complete and provided a transparent decision-making trail throughout the study and also aided in ensuring reflexivity. Research memos are one of the best ways for researchers to expand and build on their own ideas (Maxwell, 1996) and are a means to analyze data, reflect on ideas that are presented during the study, gauge how the study is going, and understand the data in a more comprehensive way (Bogdan & Biklen, 1998; Maxwell, 1996). Research memos also served as a reminder of past ideas and recorded the reasons why decisions were made at various points in the study. Research memos provided details about events and procedures that helped analyze the study and provided physical evidence of progress and achievement (Borg, 2001).

Study Procedures

This study examined how participants developed in their ability to use reflection and inquiry by engaging in the online clinical post-conference. The study specifically examined the stages of reflection and the stages of inquiry that were displayed weekly in postings to the online clinical post-conference in two senior-level clinical nursing courses.
Each of these courses ran for seven weeks and consisted of a theory (classroom) portion (lasting four hours per week) and a clinical component (lasting 10 hours per week). The first week of the clinical experience consisted of an orientation to the course and to the clinical facility. Therefore, each participant had six weeks of actual clinical experiences with six weeks of online postings per course. Research memos were kept throughout the course of the study and during data analysis. Table 2 describes the timeline for data collection and the data set that was produced in this study.

Clinical experiences for the *Nursing the Critically Ill* course occurred one day a week for 10 hours. During these clinical experiences, participants cared for patients in the medical intensive care unit (MICU) of a level 1 trauma center, under the direct supervision of a university instructor. The instructor supervised a group of participants while participants cared for critically ill clients. In the *Integration of Leadership and Management in Nursing* course, participants completed 120 clinical hours caring for clients within a seven-week period under the supervision of preceptor nurses in various acute care hospitals. Preceptor nurses were not university faculty, but were licensed registered nurses employed as nurses in the area’s health care facilities. These nurses volunteered to supervise nursing students on a one-on-one basis. By state of Ohio law, preceptor nurses must possess “at least two years’ experience in the practice of nursing as a registered nurse with demonstrated competence in the area of clinical practice in which the preceptor provides supervision to a nursing student” (Ohio Board of Nursing, 2011, Chapter 4723-5-10-A[5][b]).
Table 2

Timeline for Data Collection and Description of the Data Set

<table>
<thead>
<tr>
<th>Data Source</th>
<th>When Collected</th>
<th>Frequency of Collection</th>
<th>Amount of Data Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online clinical post-conference postings</td>
<td>During the <em>Nursing the Critically Ill</em> course Fall semester 2011</td>
<td>Weekly for 6 weeks</td>
<td>Original postings and participant responses 520 postings</td>
</tr>
<tr>
<td>Interviews</td>
<td>December 2011</td>
<td>At the end of the <em>Nursing of the Critically Ill</em> course</td>
<td>Interviews lasted approx. 1 hour 100 pages of transcripts</td>
</tr>
<tr>
<td>Phase 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online clinical post-conference postings</td>
<td>During the <em>Nursing Leadership and Management</em> course Spring semester 2012</td>
<td>Weekly for 6 weeks</td>
<td>Original postings and participant responses 202 postings</td>
</tr>
<tr>
<td>Interviews</td>
<td>March 2012</td>
<td>At the end of the <em>Nursing Leadership and Management</em> course</td>
<td>Interviews lasted approx. 1 hour 77 pages of transcripts</td>
</tr>
<tr>
<td>Research memos</td>
<td></td>
<td>Weekly during each course and during data analysis</td>
<td>13 memos</td>
</tr>
</tbody>
</table>

Data Collection Procedures

*Nursing of the Critically Nursing Course*

Participants received a one-hour introduction to reflection and inquiry prior to participation in this research. This instruction consisted of information about the theories of reflection and inquiry, the importance of each to the clinical practice of a nurse, and the steps for engaging in both. The researcher explained the procedures of the study and answered questions the participants had about the study. Handouts that outlined the stages of reflection and inquiry, explained how to engage in reflection, and described how to use
reflection to learn from experience were given to participants. These handouts are located in Appendix G.

Participants were instructed to create a posting each week to the asynchronous discussion board that constituted the online clinical post-conference. The online clinical post-conference was conducted using Vista Blackboard (Web-CT), a password-protected platform. Only students enrolled in the course had access to the Vista site. Participants had varying degrees of experience with the use of the Vista Blackboard platform since they had used this format in a varying number of other nursing courses over the previous two years. The weekly postings consisted of participants posting to an asynchronous discussion board a reflection of their clinical day as well as a question or puzzling problem that occurred during their clinical day. The researcher developed guidelines for posting to the online clinical post-conference and gave them to participants during the orientation session, prior to the start of their clinical experience; the guidelines were also posted on the course Vista site. The guidelines and instructions given to participants covered both reflection and inquiry. The guidelines are located in Appendix D.

Participants were required to complete their initial posting each week within 48 hours after their clinical experience. Participants were instructed to read the postings of all the other participants in the class and respond substantively to the postings of at least two of their peers within 48 hours of the original postings; participants responded more often than the required two responses. The asynchronous discussion board provided a public venue for participants to share reflections with others and to learn from the experiences of others. All students in the clinical group as well as the course instructors
had access to the discussion board; they viewed participant responses and commented on
the postings.

If at any time participants were unsure or afraid or had questions or concerns about
the reflection and inquiry processes that they did not wish to share with the group, they
were instructed to send a private email to the researcher. These emails would constitute
private conversations should those types of issues arise. No participants found it necessary
to privately email the researcher with questions or concerns.

The researcher also posted comments on the online clinical post-conference
discussion board responding to participant postings. Researcher comments were made to
encourage participants in their use of reflection and inquiry and to clarify thinking that
participants displayed; these comments became part of the postings to the online clinical
post-conference.

**Integration of Leadership and Management in Nursing Course**

The second phase of data collection began in the Spring semester of 2012 with the
start of the *Integration of Leadership and Management in Nursing* course. Three
participants graduated after taking the *Nursing of the Critically Ill* course, and the
remaining five participants continued on in the study and were enrolled in the *Integration
of Leadership and Management in Nursing* course. The researcher met with the
participants again on the first day of class to review the concepts of reflection and
inquiry. Participants began clinical experiences with their individual preceptors and
again recorded reflections and inquiries weekly on the online clinical post-conference.
The same guidelines for posting to the online clinical post-conference from the first course were used in this second course.

During both phases of data collection, participant confidentiality was protected, as no identities were included in any summary information. Table 3 describes when participants were interviewed. All eight participants took part in phase 1 of the study and were interviewed after completing the *Nursing the Critically Ill* course. Three participants were only interviewed once because they graduated after phase 1 of the study. The other five went on phase 2 of the study and took the *Nursing Leadership and Management* course. Those five participants were interviewed twice.

Table 3

*When Participants Were Interviewed*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Interview 1 – After phase 1 <em>Nursing of the Critically Ill</em> course</th>
<th>Interview 2 – After phase 2 <em>Nursing Leadership &amp; Management</em> course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sara</td>
<td>X</td>
<td>Not interviewed a second time. Participant graduated.</td>
</tr>
<tr>
<td>Stephanie</td>
<td>X</td>
<td>Not interviewed a second time. Participant graduated.</td>
</tr>
<tr>
<td>Louise</td>
<td>X</td>
<td>Not interviewed a second time. Participant graduated.</td>
</tr>
<tr>
<td>Bob</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Daniel</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Veronica</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ann</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Marie</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Overview of Data Analysis

Creswell (2009) stated that data analysis involves making sense out of text, preparing the text for analysis, attaining a deeper understanding of the data, and interpreting the larger meaning of the data. Data analysis is accomplished through the steps of organizing, preparing and reading the data, coding the data, and interpreting meaning in the data.

Asynchronous discussion board postings of participants engaging in the online clinical post-conference were examined first to identify how postings evidenced reflection and which stage of reflection as described by Boud et al.’s (1985) model of the reflective process was displayed. The stage of reflection displayed each week by every participant was recorded and compared to stages that participants displayed in earlier weeks to ascertain if participants progressed to higher stages of reflection, regressed, or showed no change.

The postings were examined again to identify how postings demonstrated inquiry and at which stage of the practical inquiry model as described by Garrison, Anderson, et al. (2000, 2001) was displayed. The stage of inquiry displayed each week by each participant was recorded and compared to stages that participants displayed in earlier weeks to ascertain if participants progressed to higher stages of inquiry regressed or showed no change.

Transcripts of the personal interviews were analyzed to determine participant viewpoints regarding how the online clinical post-conference enabled them to use
reflection and inquiry at higher stages. The data analysis process described in this chapter was completed twice, one time for reflection and a second time for inquiry.

**Step 1: Analyzing for Reflection**

**Organizing, preparing, and reading the data.** The total data set for this study included 720 postings to the online clinical post-conference, 170 pages of interview transcripts, and 13 research memos. The data analysis process began with the step of organizing, preparing, and reading the data. The researcher first printed two copies of the transcripts of all online clinical post-conference postings. In addition, participant interviews were transcribed and two copies of the interview transcripts were made. Individual participant names were deleted in the transcripts and replaced with pseudonyms. One set of transcripts was created to examine for evidence of the elements and stages of reflection as described by Boud et al. (1985); the other set of transcripts was created to examine for evidence of the stages of inquiry as described by the practical inquiry model. The researcher also printed a copy of her research memos.

Transcripts of the online clinical post-conference were examined first. The researcher read all transcripts of online clinical post-conference postings to obtain a general sense of the information they contained and to reflect on their overall meaning and how they evidenced the elements/stages of reflection as described by Boud et al.’s (1985) model of reflection. This step was performed so that the researcher could get a sense of the whole. The researcher placed handwritten notes in the margins to record her thoughts about the data at this beginning stage of analysis. Transcripts of the participant
interviews were then read to determine their overall meaning following the same procedure.

**Coding the data.** Creswell’s (2009) data analysis process includes the process of coding the data. Coding is the process of identifying the ideas (or topics) that are represented in the text, putting those ideas into codes (categories), and labeling those codes (Creswell, 2009). In this study, the reflection process described by Boud et al. (1985) was used as a base for the coding. Transcripts of the online clinical post-conference were coded for the element/stage of reflection as described by Boud et al. (1985), which was evidenced in the posting. Participant statements indicating reflection in the transcripts were underlined. The researcher asked the question, “What is this statement about?” to determine the element/stage of reflection evidenced in the posting. A handwritten note was placed in the margin of the transcript indicating what element/stage of reflection was displayed.

Participant statements in the postings that illustrated each element/stage of the reflective process were selected, sorted, and placed into separate files based on the element/stage of the reflective process they evidenced in order to provide the rich description that is a hallmark of qualitative research. Statements that did not seem to relate to the research question were re-examined to see if they offered any new insights or understandings before they were discarded.

Transcripts of participant interviews were examined to see if data in them supported the conclusions obtained from the online clinical post-conference transcripts.
In addition, the research memos were examined to compare and verify conclusions reached in data analysis with impressions gained during the course of the study.

**Interpreting the meaning in the data.** The final step in the data analysis process is making an interpretation of the data or determining what the data means and asks the question, “What was learned?” (Creswell, 2009). In this study, the researcher asked the question, “What does the data tell me about how participants developed in their ability to utilize reflection by engaging in an online clinical post-conference?”

The findings of the study were compared with findings of previous studies in the literature with the idea of determining if this study’s findings confirm or diverge from the results of previous research (Creswell, 2009). This continuous literature review enabled the researcher to gather more data with which to analyze and to clarify the conclusions of the study (Creswell, 2009).

**Step 2: Comparing Stages of Reflection**

In addition to examining in what manner participants utilized reflection, this study also sought to determine to determine the extent to which participants progressed in utilizing reflection at higher stages by participating in an online clinical post-conference. In this step of the analysis process, postings to the online clinical post-conference were assigned to one of the seven stages of reflection described by Boud et al.’s (1985) model. The stage of reflection displayed by each participant was recorded weekly and compared to stages that participants displayed in earlier weeks to ascertain if participants progressed to higher stages of reflection. Higher reflective ability was determined to be participants progressing to higher stages of reflection on Boud et al.’s (1985) model of reflection.
A description of the Stages of the Reflective Process coding scheme including description of each level and criteria for each level of Boud et al.’s (1985) model of the reflective that was used to determine levels of reflection is included in Table 4.

**Step 3: Analyzing for Inquiry**

The data analysis process outlined previously was repeated on the second set of online post-conference transcripts to analyze for evidence of inquiry exhibited by participants. The stages of the practical inquiry model were used as the basis for codes indicating inquiry. The same process that was used for reflection obtained codes for inquiry. In addition, the same procedure for examining transcripts of participant interviews and research memos was followed, however, this time the focus was on inquiry.

**Step 4: Comparing Stages of Inquiry**

In addition to examining in what manner participants utilized inquiry, this study also sought to determine the extent to which participants progressed in utilizing inquiry at higher stages by participating in an online clinical post-conference. In step 4 of the data analysis process, postings to the online clinical post-conference were analyzed to determine which of the four stages of inquiry described by the practical inquiry model of Garrison, Anderson, et al. (2000, 2001) they evidenced. Specific attention was paid to determine whether students followed their inquiry with searching for knowledge and actually answering their questions or solving the problem. The stage of inquiry displayed by each participant was recorded weekly and compared to stages that participants displayed in earlier weeks to ascertain if participants progressed to higher stages of
Table 4

*Stages of the Model of the Reflective Process*

<table>
<thead>
<tr>
<th>Stages of the Reflective Process</th>
<th>Criteria</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Returning to experience</td>
<td>A recollection of events. Replaying the experience. A recounting the features of the experience.</td>
<td>Detail is important here</td>
</tr>
<tr>
<td>2. Attending to feelings</td>
<td>Utilizing positive feelings Removing obstructing feelings</td>
<td>Focus on positive feelings about the experience. Remove impediments related to experience</td>
</tr>
<tr>
<td>3. Association</td>
<td>Linking of new data (knowledge, feelings and attitude) with what is already known (prior knowledge, feelings, or attitudes).</td>
<td>Relating the old and the new. Making way for the new</td>
</tr>
<tr>
<td>4. Integration</td>
<td>Seeking relationships between prior knowledge, feelings or attitudes with new knowledge, feelings or attitudes. Arriving at insights</td>
<td>Relating the old and the new. Synthesis. Emerging originality.</td>
</tr>
<tr>
<td>5. Validation</td>
<td>Testing for internal consistency between new appreciations and prior knowledge or beliefs. Authenticity of new ideas and feelings.</td>
<td>Applying a “reality test”. Try out new perception in new situations.</td>
</tr>
<tr>
<td>6. Appropriation</td>
<td>Making knowledge, one’s own new knowledge, feelings, or attitudes. Entering into a new sense of identity. The new knowledge, feelings, or attitudes becoming a significant force in own life.</td>
<td>New knowledge becomes part of value system.</td>
</tr>
<tr>
<td>7. Outcome of Reflection</td>
<td>Transformation in perspectives, change in behavior readiness, or application commitment to action.</td>
<td>New ways of doing something, clarification of an issue, development of a skill, or resolution of a problem.</td>
</tr>
</tbody>
</table>

inquiry. Higher inquiry ability was determined to be participants progressing to higher stages of inquiry on the PIM. A description of the PIM coding scheme including the description and criteria of each stage is included in Table 5.

Table 5

<table>
<thead>
<tr>
<th>Stage</th>
<th>Criteria</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. State of dissonance</td>
<td>Feeling of unease that is produced by some triggering event in the experience of the participant that produces a dilemma</td>
<td>Something “bothers” the person. Something is not quite right. Asking the right question</td>
</tr>
<tr>
<td>2. Exploration</td>
<td>Search for information, knowledge or alternatives that might be helpful to them in solving their dilemma</td>
<td>Determining where to go to find required information. Seeking information from various sources.</td>
</tr>
<tr>
<td>3. Integration</td>
<td>Attempt to look for insights and to integrate knowledge and information they gained into a coherent thought or view</td>
<td>Determining how the new-found information relates to previously acquired knowledge.</td>
</tr>
<tr>
<td>4. Resolution</td>
<td>The resolution of the issue and solution to the problem</td>
<td>Answer obtained. Information stored for later use.</td>
</tr>
</tbody>
</table>


**Ensuring Trustworthiness**

A qualitative study is considered to be “trustworthy” if it exhibits transferability, dependability, and credibility (Lincoln & Guba, 1985). Transferability in qualitative research is established by providing the reader with enough information so they can make
a determination that the conclusions reached by the study might be applicable to other situations in similar circumstances (Lincoln & Guba, 1985). In this study, transferability was ensured by providing thick, rich descriptions of how participants evidenced the stages of reflection and inquiry.

Dependability is shown by providing a way for readers to examine and track the methods used to collect and analyze the data (Lincoln & Guba, 1985). In this study, data summary tables and detailed descriptions of the data (how it was collected and analyzed) provide a means for the reader to determine the dependability of the findings. All data sources (transcripts from online clinical post-conference, interviews, and research memos) can be viewed upon request.

Credibility is defined as “truth value” which means that the results of the study are believable and represent reality to the participants of the study (Lincoln & Guba, 1985, p. 296). Creswell (2009) recommended that multiple strategies be used to increase the researcher’s ability to determine the accuracy of findings and to satisfy the reader of the accuracy of the study’s findings. This study used the techniques of triangulation, member checking, and peer-debriefing to ensure credibility.

**Triangulation**

Lincoln and Guba (1985) described four different modes of triangulation: the use of multiple data sources, methods, investigators, or theories. This study used several different data sources—artifacts, interviews, and research memos—as a way of utilizing triangulation. Triangulation of different data sources of information builds coherent justification for findings obtained in the study (Creswell, 2009). In this study, transcripts
of the artifacts (the online clinical post-conference postings) were compared to each other and to transcripts of participant interviews to determine the congruence of the data. The researcher also kept a log of her impressions during the course of the study in research memos, which served as an additional data source for triangulation. During the course of the study and during data analysis, the researcher compared conclusions obtained from the research memos, what was written in the online clinical post-conference postings, and what was said during the participant interviews. Since conclusions obtained from analyzing these different data sources were congruent; this indicated that the findings were credible.

**Member Checks**

Member checks are another way to ensure the trustworthiness of results and consist of asking participants to comment on the researcher’s interpretation of the data (Merriam, 2002). In member checking, the data, interpretations, and conclusions arising from the study are confirmed with the participants (Lincoln & Guba, 1985). In this study, the member checking process was done individually and in private. Participants received the transcripts from their postings to the online clinical post-conference, personal interviews, and summaries of the conclusions reached by the researcher. Participants were asked to check the data for accuracy, to comment on the conclusions reached by the researcher, and to validate that the conclusions were accurate.

**Peer Debriefing**

Peer debriefing is an additional way to ensure the accuracy of the findings and the credibility of a qualitative study (Creswell, 2009). In this study, two nursing faculty
colleagues were asked to review the transcripts of the online clinical post-conference postings and the interviews as well as the conclusions reached by the researcher. One peer debriefer was an instructor who teaches the *Nursing the Critically Ill* course and the other was an instructor who teaches in the *Nursing Leadership and Management* course. These two nursing instructors were asked to review the transcripts, verify that the conclusions reached by the researcher were valid, and identify any conclusions that were missed by the researcher. The meetings with the peer debriefers occurred separately and privately after they were given time to review the data and conclusions. Very few disagreements arose; these were discussed and resolved before continuing.

**Ethics**

Because qualitative research involves data collection from human beings, human researchers need to anticipate ethical issues that may arise and conduct their studies in a way that protects human rights (Creswell, 2009). This researcher took steps to ensure that the study was conducted in an ethical manner. Approval from the Kent State University Institutional Review Board (IRB) to conduct this study was sought and all the provisions in the approval document were followed. After IRB approval was obtained, the process of selecting study participants began.

Senior baccalaureate nursing students enrolled in two clinical nursing courses were recruited to be in the study by email. When participants volunteered to be in the study, they were given a consent form to read. The consent form clearly outlined all the details of the study, including risks and benefits. The consent form is included in Appendix B. In addition, the researcher explained all risks and benefits of study
participation, and answered any questions participants may have had before they signed the informed consent form. Participants were told before signing the consent form that they could withdraw from the study at any time without explanation. If participants withdrew from the study, they would not face any repercussions. Their course grades would not be affected in any way by their participation or non-participation in this study.

This study was conducted with college students, all of whom were over the age of 18. Participants were assured that their confidentiality and privacy would be maintained in the reporting of the data in that pseudonyms would be used in all data collected.

**Summary**

This chapter described the methodology that was used in this study. The chapter started by restating the purpose of the research and presented the research questions that guided the study. Explanations and rationales were provided for the choice of theoretical framework, research site, methodology, and selection of participants. Sources of data and study procedures were described, data collection procedures were outlined, and data analysis measures were described. Information was provided about the descriptive characteristics of the participants, a timeline was provided for the data collection, and the data set was described. Stages of the reflective process model and the practical inquiry model were outlined. Finally, methods to ensure the trustworthiness of the study and ethics were explained. The following chapter contains the presentation and analysis of data.
CHAPTER IV

ANALYSIS OF THE FINDINGS

This study explored how participants developed in their ability to utilize reflection and inquiry at higher stages through the use of the online clinical post-conference. The venue of the online clinical post-conference was studied as a way to provide a new pedagogy in clinical nursing education. Asynchronous discussion board postings of participants engaging in the online clinical post-conference were examined (using Boud et al.’s model of the reflective process) to determine which stage of reflection was evidenced and (using the PIM) which stage of inquiry was displayed.

The research questions that guided this study were:

1. What stage of reflection do participants exhibit when using an online post-conference and do those stages increase over time?
2. What stage of inquiry do participants exhibit when using an online post-conference and do those stages increase over time?

This chapter is organized in terms of the findings of the study. First, an analysis of the stages of reflection participants displayed is presented; an analysis of findings relating to inquiry follows. Finally, the link between the online clinical post-conference and the development of reflection and inquiry is examined. Included are participant views of both the online clinical post-conference and the face-to-face clinical post-conference.
Analysis of Development of Reflection

In order to answer the research question regarding nursing students’ development in ability to utilize reflection by engaging in an online clinical post-conference, data were first analyzed to determine what stage of reflection participants displayed in postings to the online clinical post-conference. This study used Boud et al.’s (1985) model of the reflective process to assist in data analysis; it provided a means of determining the participants’ ability to use reflection by ascertaining what stages of the reflective process were displayed in the online clinical post-conference postings. Boud et al.’s (1985) model stated that the reflective process includes the following elements/stages: returning to experience, attending to feelings, re-evaluating the experience, association, integration, validation, appropriation, and outcome of the reflection. Table 6 presents criteria used to identify each element/stage of the reflective process and evidence illustrating the elements of reflection; a discussion of each element/stage of the reflective process follows.

Stage 1: Returning to Experience

Boud et al. (1985) described the best way to begin reflection is to recollect what has taken place, replay the experience in the mind, and describe reactions to the experience. In order to provide an accurate portrayal of events as they actually happened, recollections are better written than spoken and should involve close attention to detail (Boud et al., 1985). Details in the reflection are important because they provide an accurate basis of actual events that were experienced at the time, not what people wished had occurred (Boud et al., 1985).
## Table 6

*Elements/Stages of Reflection Exhibited by Participants*

<table>
<thead>
<tr>
<th>Element/Stage of Reflection</th>
<th>Criteria</th>
<th>Evidence of Element/Stage of Reflection</th>
</tr>
</thead>
</table>
| 1. Returning to experience | A recollection of events. Replaying the experience. A recounting the features of the experience. | • Detailed descriptions of the experience—sights, sounds, smells  
• What happened—the environment, patient condition, procedures done, actions of the participants and of the nurses  
• In what order it happened |
| 2. Attending to feelings | Utilizing positive feelings  
Overcoming obstructing feelings | • Positive feelings—“excited”  
“comfortable”  
“confident”  
• Negative feelings—“anxious”  
“nervous”  
“afraid”  
“stressful”  
“overwhelming”  
“intimidating”  
“frustrating”  
“sad”  
• “Once I knew I wouldn’t be alone, everything went smoothly.” (Marie) |
| 3. Association | Linking of new data (knowledge, feelings and attitude) with what is already known (prior knowledge, feelings, or attitudes). | • “I was calm because I did what I needed to do. I knew what to do because of what I had previously learned in class.” (Ann)  
• “I know that [blood pressure] is within normal range, but it is close enough to question. I think that I should call the physician.” (Sara)  
• “My patient had a respiratory rate of 44. I knew I had to elevate his head of the bed and I can tell he needed suctioned.” (Bob) |
| 4. Integration | Seeking relationships between prior knowledge, feelings or attitudes with new knowledge, feelings or attitudes. Synthesis. Arriving at insights | • “In hindsight, I should have stayed in the room, and behaved empathetically while listening to the information the doctor was giving.” (Sara) |
| 5. Validation | Testing for internal consistency between new appreciations and prior knowledge or beliefs. Authenticity of new ideas and feelings. | • “I do not know the reason for what we did, so I went back to my sophomore nursing book and did an online search. . . . I understand it better now.” (Sara)  
• “If I am in doubt about certain orders, I will double check.” (Stephanie) |

*(table continues)*
Table 6 (continued)

Elements/Stages of Reflection Exhibited by Participants

<table>
<thead>
<tr>
<th>Element/Stage of Reflection</th>
<th>Criteria</th>
<th>Evidence of Element/Stage of Reflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Appropriation</td>
<td>Making knowledge one’s own new knowledge, feelings, or attitudes.</td>
<td>• “This experience made me think about my own life. Definitely an eye opener for me.” (Daniel)</td>
</tr>
<tr>
<td></td>
<td>Entering into a new sense of identity.</td>
<td>• “I used to be very anxious around patients with ventilators and traches. Because of this experience, I feel very comfortable . . . and really think I would like to work in an ICU when I graduate.” (Ann)</td>
</tr>
<tr>
<td></td>
<td>The new knowledge, feelings, or attitudes becoming a significant force in own life.</td>
<td>• “I also understand that the final outcomes of the patients that I care for are my responsibility.” (Sara)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• “This experience made me think more about how complex certain things can be but yet how simple they can become if I open my mind.” (Stephanie)</td>
</tr>
<tr>
<td>7. Outcome of Reflection</td>
<td>Transformation in perspectives, change in behavior readiness, or</td>
<td>• “The experiences I have had on the SICU has changed me for the better, I feel. I see how precious and short life can be.” (Bob)</td>
</tr>
<tr>
<td></td>
<td>application commitment to action. New ways found of doing something,</td>
<td>• “Experienced nurses use their long time experience to judge their practice more than follow certain rules that do not make sense.” (Stephanie)</td>
</tr>
<tr>
<td></td>
<td>clarification of an issue, development of a skill, or resolution of a problem</td>
<td></td>
</tr>
</tbody>
</table>

All participants posted reflections each week at this beginning level of reflection that included the sights, scents, order of events, and what they were thinking as they went about their clinical day. The act of returning to experience in this study caused participants to think in detail about what occurred on the clinical unit that day and introduced the reflective process. This finding supports the thinking of Wong et al. (1995) and Chirema (2007) who also used Boud et al.’s (1985) levels of reflection in their studies. Wong et al. (1995) and Chirema (2007) stated that they disregarded the first
stage of reflection from Boud et al.’s model when using it in their studies because they felt that everyone reflected at the beginning level of returning to experience. The data from my study showed that all participants did reflect at this beginning level of reflection; however the quality of the descriptions varied. In the returning to experience stage, those who reflect superficially simply recount a “laundry list” of tasks that they performed; those who reflect well include their thoughts as they went through their experience and their reactions to what occurred (Boud et al., 1985).

Louise described her clinical experience by recounting the tasks she performed. She wrote:

After I assessed the patient, I looked to see what IV medications were hanging and then checked to see when the next time she had medications due. . . . I helped the nurse reposition my patient, did mouth care several times, emptied her catheter, calculated I&O, measured the ECG strip, and checked her fecal management system to make sure it was still in place and not leaking. I also rubbed her down with lotion just to help keep the skin moist to help prevent it from splitting because she was a little swollen.

In this posting, Louise described what she did in great detail; however, she did not include what she was thinking or what made her act, with the exception of why she rubbed her patient with lotion. Her posting was an example of a superficial reflection at the return to experience stage.

Other participants described their experiences in a more detailed manner, which included: the environment of the ICU, patients’ conditions, medications administered,
procedures performed, and subsequent actions taken. Sara posted a reflection that described her clinical experience in greater depth than Louise. She wrote:

N.A. is a 32-year-old female that was recently transferred to the ICU from the 6th floor. . . . When I entered the patient’s room, there were 4 members of the health care team around her bed, and 4 others in and out. She had also been recently intubated and attached to the ventilator machine. I did not want to be in the way, so I hung out by the door, watching and listening. I really didn’t know what to do, and the conversation between team members was quick and from all directions. It was very intimidating. . . . I just started writing down vitals every 15 minutes, and any information that I could in between those times. . . . There was a woman from respiratory there adjusting settings, and monitoring the patient’s response to the vent. I also tried to pay close attention to the patient’s physical symptoms.

Sara’s post was similar to Louise’s because they both described what actions they took. However, Sara’s post included more information, detail, and analysis. Sara described her thoughts, reactions, and reasons for acting.

**Stage 2: Attending to Feelings**

Boud et al. (1985) described the second stage of the reflective process as an analysis of feelings, emotions, and attitudes; this analysis requires self-awareness. Feelings and emotions are an important part of the learning process. Positive feelings enhance learning by creating confidence in the learner and by providing the drive to persist in spite of difficulties encountered. Negative feelings can be barriers to learning that must be
recognized and removed before good learning occurs (Boud et al., 1985). In their postings, participants described both positive and negative feelings they encountered during their clinical experiences.

**Using positive feelings.** Boud et al. (1985) argued that positive feelings enhanced the learning process because positive feelings enabled people to feel good about themselves. Positive feelings kept the learner on task and provided a stimulus for new learning (Boud et al., 1985). The data in this study confirmed that the positive feelings participants experienced enhanced their learning because when participants expressed positive emotions and feelings, they also reported the perception that they had learned.

All participants, after their first clinical in the intensive care unit (ICU), described themselves in the online clinical post-conference as having positive feelings, which came from several sources and enhanced their learning. First, participants acknowledged that they gained good feelings from the other participants and expressed appreciation that they were having clinical experiences with the others as part of the group. Louise posted that “it is nice to know that I am not alone” and Sara wrote, “I am eager to learn from all of you.”

Next, all participants described themselves as being “excited” or “super-excited” and stated that they were looking forward to performing well and to gaining experience. Daniel wrote, “I can’t wait to finally get my feet wet and feel more like a nurse.” Louise expressed that same sentiment when she posted, “I am much more confident. I am very excited and I look forward to being able to prove myself.” Bob agreed, “Overall, I am
very excited. I cannot wait to be in the ICU and to tie in all the knowledge and skills I have learned over the last couple of years.”

Ann agreed and wrote, “Overall, the clinical was good, I felt very comfortable with the care I was providing and I learned a lot.” Bob posted, “I really felt like I was part of the healthcare team. It is a great feeling to be able to help someone in need and knowing you had an impact on the patient and their family’s life.” Marie made the connection between feelings and learning. She wrote:

Usually in clinical I am very nervous and anxious, especially when passing meds. Today I was very calm and confident. This was a great feeling to have and really showed me that I am one step closer to becoming a nurse. I was comfortable passing meds and doing all procedures and everything on my own. . . . You all know that I had a wonderful day already, so I don’t need to tell you again, but it was a great feeling. . . . This week, I feel like I learned so much and grew so much as a nurse.

These postings illustrate the connection between positive feelings and learning that participants described. Every time a participant described positive emotions and feelings, they followed with a statement declaring that they learned from the experience.

Data from this study showed that the asynchronous discussion board of the online clinical post-conference was a good way for participants to offer compassion, empathy, encouragement, and support to each other, which created positive feelings in participants. It is well-known that nursing students suffer a great deal of stress during their clinical experiences (Watson, Deary, Thompson, & Li, 2008). Support from peers has been
shown to be a stress-reducing strategy for nursing students (Sprengel & Job, 2004). Support was shown by participants posting comments such as “you did a great job” (Ann), “it seems like you learned a lot” (Sara), and “you nailed it! Way to go!” (Bob). Daniel posted an “awesome, dude! Glad that you are having a great experience. Keep up the good work.” Because of the support generated in the online clinical post-conference, participants knew that they were not alone and that they had people interested in them and encouraging them. This support created positive feelings in the participants, which enhanced their learning.

**Overcoming obstructive feelings.** While positive feelings enhance learning, negative feelings obstruct learning (Boud et al., 1985). Boud et al. stated that negative feelings and emotions (especially about oneself) could create huge barriers to learning. Negative feelings often distort perceptions, lead to false interpretations of events, and can undermine the will to persist (Boud et al., 1985).

Participants reported the presence of negative emotions and feelings, especially in the beginning weeks of the clinical experience. They described themselves as being “anxious” (Bob), “nervous” (Veronica), and “afraid” (Marie), and they described their experiences as being “stressful” (Ann), “overwhelming” (Daniel), “intimidating” (Sara), and “frustrating” (Louise). These feelings came from the fast-paced environment of the ICU, the large volume of information that the participants were exposed to, and the unknown. Participants reported being anxious about not having performed many skills before, time-management, and fearing not being able to keep up with the fast pace of the ICU. Participants stated that they were intimidated by the complex patients and by the
many tubes and lines that their patients had. Ann expressed her negative feelings well when she wrote:

I am very excited to start critical care, but very nervous at the same time. The ICU is very intimidating simply because it is so serious and these patients are in critical condition. I am concerned that I feel like I don’t have many skills yet.

Daniel agreed and wrote:

I am so nervous about critical care, the clutter and the high stress environment. I am anxious about performing the tasks that are expected on the unit, it seems like it has been forever since I even picked up my stethoscope.

Most of the time, participants were able to successfully deal with their negative feelings and progress to good learning. Bob stated, “I was very nervous in the morning because I was not sure what to expect. However, as the day went on, I felt more comfortable in my new surroundings. I feel that my day went very well.” Stephanie made a conscious effort to not let negative emotions interfere with her learning. She wrote:

I said to myself that I am going to calm down, be confident, and do not [sic] let anything intimidate me today. I had a good day. I felt more confident and at ease. I was able to learn a lot.

Unfortunately, at times, negative emotions adversely affected participants’ learning and performance. Although the previous week, Stephanie performed in a satisfactory manner, the following week she commented on the effect of negative emotions on her learning:
What went well is I was able to finish the day safely; I was able to be there for the patient and was able to provide the care. What did not go so well; due to the overwhelming environment, I became nervous, scared sometimes and developed like a mental block. I felt like I was late giving the medication. I also felt like I was not as organized as I wanted to be. I felt like I was not giving her the care she deserves. Next time I will try to relax, think and get organized more efficiently.

Louise’s experience dealing with negative emotions occurred on the first day of the 6-week Nursing of the Critically Ill clinical experience. Because of her anxiety, Louise did not perform well. As her instructor went with her to administer medications, Louise could not answer a single question. Her performance was so poor that the instructor felt that she was not safe to deliver patient care that day and asked her to leave the clinical unit after only three hours in clinical. Louise described the experience this way:

I woke up that day feeling confident because I had had no previous problems in a clinical setting. During this clinical, it proved to be much harder than previously, and I realized that I had already moved much further into the anxiety and had become much more psyched out before this task was to begin. At the beginning of the clinical, it was hard to even find the nurse that I was going to be helping during the day. When I did, it did not help the intimidation that had been adding to my downfall for the day. The nurse was quiet and gave me the impression that they [sic] did not want to be there or even want me there. Later, as everything felt
like it was closing in around me, I could feel the nurse staring at me as I fumbled around and couldn’t think.

A third instance of negative emotions affecting learning occurred to Ann. She had an encounter with the daughter of a patient, which caused her to break down and cry. Fortunately, this time, the nurse and her instructor were able to step in and mitigate the damage so that good learning still occurred. She wrote:

In clinical, I was trying to achieve being more comfortable in the ICU setting. I was very nervous to be in this clinical because I thought it was going to be faster paced than what we are used to . . . My clinical experience went very well until 4:30 p.m. I was feeling very comfortable with my day and what I accomplished. I felt that I took very good care of my patient and gave him the attention that he would not have gotten if I was not there. At 4:30 my perception of how I did went down the drain. My patient’s daughter, who had only been there for about a half an hour, started questioning me on the care that I had provided that day and asked why he wasn’t shaved. It took me by surprise, and it really upset me that she was questioning me like she was . . . I was so caught off guard and I didn’t really know how to respond to how she was acting and treating me . . . I understand that having a loved one in the ICU puts a lot of pressure on you as a family member, but the way she was talking to me was like she was testing me. The nurses saw how upset I was and told me that the daughter was not a very nice lady and not to worry about it. Mrs. Florence also explained to me that I did not do anything wrong and that she was just trying to get me worked up.
In this instance, negative feelings affected how Ann viewed her experience. Since Ann said that she felt she performed well in clinical until the patient’s daughter questioned her, I wanted to determine how Ann worked through her negative feelings. I responded to Ann’s post in the online clinical post-conference in this way:

It sounds like you had a good day until 4:30 p.m. You stated that you felt very comfortable with your care until 4:30 when your perception of how you did “went down the drain.” This is a great example of how our emotions can affect our experiences and our learning. You also said that you didn't know how to respond to her. So, my question to you now is—after having had time to reflect on the experience, what can you do differently next time this happens? How can you respond to a family member like this? But more importantly, what can you do so that an experience like this does not cause negative emotions that might change your perception of your care? You know you did a good job with that patient. Mrs. Florence and the nurses told you that you did a good job. So, how can you integrate this into your repertoire of knowledge to use the next time a similar situation happens?

Ann’s response to my posting showed that when she had time to reflect on the situation, she was able to make sense of it and devised specific strategies to use in the future. Ann wrote:

I was very nervous to attend clinical because I did not know what to expect. I think next time it happens I'm not going to take what she is saying to heart. I think in my mind I got kind of defensive (I did not act defensive when I was
talking to her) and I got upset because she was questioning the care that I had given to my patient that day. I was more asking myself, “Who is this lady coming in here and asking what I did all day?” At the moment I didn't realize that she was asking all these questions that were unnecessary to “test” me. After thinking about it, I would tell her everything I did and not get so upset. . . . Next time I encounter something like, this I am going to remember that the family members are stressed and sometimes don't mean to be so difficult and rude. If I was in the same situation as them, I would probably be stressed and not in a good mood either. I think that if I would have realized at that moment that she was just “testing” me, I would have been a little bit better. I am not going to let it affect how I perform as a student nurse or as a nurse. If anything, I am going to go into next week being more prepared for situations like this to occur.

As seen in the three examples described above, the data of this study support the idea that negative feelings create a barrier to learning. When confronted by negative feelings, participants did not perform well, stated that they could not think, and developed a “mental block.” Louise’s learning and performance was so negatively affected by her destructive feelings that she was judged by the instructor as being unsafe to continue practice that day and was sent home. Fortunately, through reflection and guidance, Ann and Stephanie were able to remove the barriers created by their negative emotions so that the learning process could proceed.

Participants attempted to help each other deal with negative emotions. When participants read the postings of their classmates who expressed feelings of being
overwhelmed and lacking confidence in their organizational skills or nursing ability, they
gave positive reinforcement to each other throughout the study. In the instance when
Louise performed so poorly that she was sent home from clinical, her situation brought
courage from the participants as seen in Bob’s response:

I am sorry that you felt so much anxiety during clinical. Just remember that you
have come so far in the nursing program, and you have a lot of knowledge. If you
ever feel anxiety coming on again, just take a few deep breathes [sic] or come talk
to one of us. I know that you do not know us all that well, but we are pretty good
people and always willing to talk or help. I hope next week goes better for you!

Veronica echoed this sentiment and wrote, “Every one of us is willing to help
because we learn from each other, and we are all there for each other.” Sara added, “We
all want for you to succeed, we are a team, Louise!” Marie reinforced the team concept
and wrote, “Do not hesitate to come to any of us for anything at all. We are all in this
together and are here to help each other out.”

When Ann experienced negative emotions because the daughter of her patient
spoke harshly to her, her classmates responded to her with compassion and
encouragement; they tried to make her feel better about herself. Miranda told Ann, “You
always give your patients great care because you are so in tune to their needs, and that’s
what’s going to make you a great nurse!”

Even reports of minor frustrations elicited responses of compassion and empathy
and an attempt to make the participant feel better. One week Daniel reported some
frustration because he was not able to successfully complete an IV insertion that he had
attempted. Bob quickly responded with encouragement and even provided a quote from Michael Jordan. Bob wrote, “The best way to look at it is that you tried. ‘I can accept failure, but I cannot accept not trying’—Michael Jordan.” Sara also tried to make Daniel feel better about his situation; “I understand your frustration, but you shouldn’t be hard on yourself. At least you tried. You will get the next one.”

The online clinical post-conference provided the venue for participants to describe their negative emotions and frustrations and for the other participants to offer sympathy and support. This support assisted the participants to feel better knowing that they are not alone and to set aside negative emotions so that they did not create a lasting barrier to learning.

**Stage 3: Association**

Association includes the linking of new data (knowledge, feelings, and attitude) with what is already known (prior knowledge, feelings, or attitudes; Boud et al., 1985). Three of eight participants (37.5%) displayed evidence of reflecting in the association stage. Bob described caring for a patient who developed respiratory issues. He assessed the patient’s condition, thought back to what he learned previously about respiratory care, and made a connection between the two. Bob wrote:

The time I used my knowledge the most was when my patient had a respiratory rate of 44. I knew I had to elevate his head of the bed and I can tell he needed suctioned. I knew I needed someone with me to suction so I went and got help as fast as I could. I was glad to see that my quick critical thinking helped the patient.
Marie described a situation where she learned the importance of following isolation precautions. On the clinical unit, she observed health care workers who did not properly wear gowns and who walked into and out of isolation rooms without washing their hands. She made the connection between what she knew (isolation procedure) and what she was seeing (people violating isolation protocol). She wrote, “Last week there were only two patients in isolation and this week, there were closer to 5–6 in the same hallway that are now in isolation. I do not think this is just a coincidence.” Ann described her experience caring for a patient who began choking. “I was calm because I did what I needed to do. I knew what to do because of what I had previously learned in class.”

The postings described above illustrate the reflections of participants in the association stage of reflection. This data supports previous research that found nursing students often demonstrated reflection at the level of association (Chirema, 2007; Wong et al., 1995). As in these previous studies, participants were able to link previously learned knowledge and feelings with new knowledge.

**Stage 4: Integration**

The integration stage of the reflective process requires the reflector to seek relationships between prior and new knowledge, feelings, or attitudes for the purpose of arriving at insights relating the old and the new (Boud et al., 1985). Five of eight (62.5%) participants displayed evidence of reflecting in the integration stage. Participants’ reflections in this stage dealt mainly with unfamiliar patient diagnoses. Sara experienced a situation that produced new knowledge and a new reality for her when she
cared for a patient diagnosed with a brain tumor who had experienced a stroke. She struggled with connecting her previous knowledge and feelings with what happened in her clinical experience, and she developed a new understanding about the role of the nurse. Sara described the situation in the following posting:

I tried to give the patient’s family some space while they heard the status and prognosis of their loved one, but I felt as if I was intruding. I guess what I mean is that they knew I am a student, and I did not want to be disrespectful by coming off as only being interested because I was “knowledge hungry.” In hindsight I should have stayed in the room, and behaved empathetically while listening to the information the doctor was giving.

Ann described her experience caring for a patient who in the hospital because of a hemorrhagic stroke. The patient’s status was “comfort care only” which meant that no resuscitative measures would be taken if he went into cardiac or respiratory distress. The day that Ann cared for him, the patient started to cough, his heart rate increased into the 140s (normal is 60–100), and his oxygen saturation dropped into the 80s (normal is greater than 92). Usually, in a situation like this, the patient might be intubated and suctioned, which was not an option for him because the family refused to permit this procedure. The nurses could only put oxygen on him and encourage him to cough. Finally, after several nerve-wracking minutes, the patient was able to clear his own airway and everything returned to normal. Ann wrote, in dealing with her first emergency, she was “very scared on the inside, but I felt like I was very calm on the outside.” Ann sought to reconcile her old knowledge of suctioning being a commonplace
procedure to the new reality where a family would not permit the procedure to be done. She then had to figure out what to do for her patient, who was experiencing respiratory distress.

**Stage 5: Validation**

In the validation stage, reflectors test for internal consistency between new knowledge and prior knowledge or beliefs (Boud et al., 1985). This stage can be seen as applying a reality test where reflectors seek to determine the authenticity of new ideas and feelings (Boud et al., 1985). In this study, three of eight (37.5%) participants demonstrated reflection in the validation stage where they tested for internal consistency between new ideas and prior knowledge. Reflecting in the validation stage showed that participants were beginning to examine their experiences in a critical manner.

Sara experienced a situation in which she was faced with a contradiction in what she was being told on the clinical unit (new knowledge) and previous knowledge. She described in detail the process she went through validating the new knowledge. In this instance, the “new knowledge” was not consistent with what she previously learned and did not pass her reality test. She related the situation in this way:

The nurse I was working with told me that we needed to get the specimen, and handed me a sterile cup in the supply room. She asked me if I knew what to do, and I replied that I should get the sample from the port on the line of the Foley. She replied that I didn’t have to get it from there, and that she just gets it from the drain at the bottom of the bag. Mrs. Connor’s [a previous nursing instructor] voice was instantly in my ear, and I thought, how could that be a sterile sample?
All I kept thinking was that this sample will definitely have bacteria, and that she may get treated with antibiotics unnecessarily. Then I thought about what complications were associated with antibiotic therapy, e.g., resistance, *C. difficile*, thrush, et cetera. I spoke with my instructor and a fellow classmate, and they both said “no way!” We pulled a sterile sample from the clamped port on the Foley line, and NOT from the bag.

Results showed that 37.5% of the participants in this study exhibited reflection at the validation level. These findings are in opposition to what Chirema (2007) found in her study, but supported Wong et al.’s (1995) results. Chirema (2007) found that none of her participants exhibited reflection at this stage whereas four of 45 (9%) of Wong et al.’s (1995) participants did. The participants in both Wong et al.’s and Chirema’s studies were registered nurses enrolled in post-registration courses who used reflective journals as the venue to display their reflection while the participants in my study were nursing students who posted their reflection to the online clinical post-conference. Results seem to indicate that participants posted reflections at higher stages using the online clinical post-conference.

**Stage 6: Appropriation**

During the appropriation stage, reflectors undertake the task of making the new knowledge into their own knowledge, feelings, or attitudes, which enables them to create a new sense of identity. The new knowledge, feelings, or attitudes become a significant force in the reflector’s life and becomes part of their value system (Boud et al., 1985). In the example cited earlier where Sara validated the correct way to collect a urine sample
from a Foley catheter, she progressed to the appropriation step. She took the knowledge she gained about standing up for what she knew was right and incorporated it into her value system. She wrote:

I have to learn and decide . . . how I am going to practice nursing? It is not wise to blindly trust the recommendations of others when patient care is concerned. The massive amount of knowledge and experience needed to become proficient will take time to accrue, and I understand this fact. More importantly, I also understand that the final outcomes of the patients that I care for are my responsibility.

Stephanie also related an episode where she reflected at the appropriation stage by using her nursing judgment. She was caring for a patient who had a wound and was visited by the wound care nurse, a specialist in the care of wounds that will not heal. Stephanie questioned her own judgment but learned that she was correct in what she was thinking and should have trusted her judgment. She wrote:

The wound care nurse came in to unwrap the dressings, did the measurement, and concluded that the wounds looked good. As I was observing, one wound seemed to be infected, but I could not comment because as she introduced herself she said, “I have worked 35 years” as a nurse. . . . I asked, “what do you think that might be,” pointing to the scar tissue that seemed infected. “Don’t you want to clean it? How can I help so that we can clean it up?” She went, “When you see something like that you leave it alone and don’t try to remove anything!” I wasn’t satisfied with the answer, but I left it alone. . . . Later on, the infectious disease
doctor came in. . . . As soon as he looked at the wound, he went, “that wound definitely looks infected!” My question was what things I should [use] as a nurse when I make my judgment and conclusion regarding a patient. The best answer is [to] look at the patient, do a thorough assessment, collect some data, ask if in doubt, and do some research. . . . The experience made me think more about nursing judgment. How am I going to use my judgment to guide my practice? It made me think more about how complex certain things can be but yet how simple they can become if I open my mind.

These data show that six of eight (75%) of the participants of this study achieved the appropriation stage of reflection. Only one participant in each of Wong et al.’s (1995) and Chirema’s (2007) studies achieved Level 6 on Boud et al.’s (1985) model of reflection.

**Stage 7: Outcome of Reflection**

The final and highest stage in the process of reflection is that of outcome of reflection. The ultimate desired result of reflection, this stage produces a transformation in perspective, a change in behavior readiness, or an application commitment to action. The reflector has learned a new way of doing something, achieved clarification of an issue, developed a new skill, or reached resolution of a problem (Boud et al., 1985).

Five of the eight participants (62.5%) reached this highest stage of reflection at least once during the course of the study. Stephanie came to a new understanding about the responsibilities of being a nurse, which transformed how she thought of herself as a nurse. She wrote:
The experience today made me realize that as a student nurse I should not only care for the patient, but also the family member and myself because certain situations can be overwhelming. I have also learned that as a nurse I will sometimes be involved in complex issues that involve a life and death decision so I have to be aware of my role and my responsibilities. I am going to use a lot of stress relieving techniques and incorporate them into my daily life.

In another experience, she wrote, after caring for a very critically ill patient who suffered a stroke and was not expected to live:

The experience I had this day opened up my eyes and my mind about the care that patients in the intensive care unit require. It made me appreciate life, made me more humble, and pushes the drive inside of me of wanting to care for the sick people.

Bob’s experiences on the ICU also provided him with a new understanding about life. He wrote, “The experiences I have had on the SICU have changed me for the better, I feel. I see how precious and short life can be.”

The data from this study showed that, through the use of the online clinical post-conference, five of eight (62.5%) participants achieved the highest stage of reflection. In Wong et al.’s (1995) study, only one participant achieved this highest outcome of reflection, whereas in Chirema’s (2007) study five of 42 (11.9%) participants reached the outcome of reflection stage. These results indicate that the online clinical post-conference might be a valuable venue for promoting and displaying reflection.
Development of Reflection Over Time

To determine the extent to which participants progressed in utilizing reflection at higher stages by participating in an online clinical post-conference, postings were analyzed to determine how they evidenced reflection and were assigned to one of the seven stages of reflection described by Boud et al.’s (1985) model. The stage of reflection displayed each week by each participant was recorded and compared to stages that participants displayed in earlier weeks to ascertain if participants progressed to higher stages of reflection.

Nursing of the Critically Ill course. The study began with participants taking the Nursing of the Critically Ill course. Stages of reflection displayed weekly by participants in the Nursing the Critically Ill course are contained in Table 7. A discussion follows.

Eight participants took the Nursing of the Critically Ill course. In the first week of the study, all eight participant postings fell into the first four stages of the reflective process, which indicated that the participants were not high-level reflectors. One participant of the eight (12.5%), Stephanie, was the lowest-level reflector because her posting showed evidence of being at stage 1, the return to experience stage. She wrote, “I was monitor nurse. My duties were to print all the ECG strips, analyze and interpret them. Then I participated in Grand Rounds.” The other seven participants (87.5%) displayed behaviors evidencing higher stages of the reflective process. Four of the eight participants (50%; Louise, Veronica, Ann, and Marie) showed evidence of being at stage
Table 7

*Stages of Reflection Evidenced Weekly by Participants—Nursing the Critically Ill Course*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sara</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Stephanie</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Louise</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Bob</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Daniel</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Veronica</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Ann</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Marie</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>


2 (attending to feelings), two of the eight participants (25%; Sara and Bob) were placed in stage 3 (association), and one participant (Daniel) was placed in stage 4 (integration).

This data is in contrast to Ip et al.’s (2012) study, which found that initially (before completing a program on reflective learning), 92.1% (35 out of 38) of participants were determined to be non-reflectors by reflecting at stage 1 and only 7.9% (3 out of 38) were considered to be reflectors (reflecting at stages 2, 3, or 4). Significantly more participants (87.5%) in my study initially placed in stages 2, 3, and 4, which showed that they began the study demonstrating some reflective ability.
Comparing stages of reflections week one and week six. After determining at what stage of reflection participants began the study, the next step was to compare the stages that they finished the Nursing the Critically Ill course. Table 8 compares the number of participants that placed in each stage of the reflective process at the beginning of the Nursing the Critically Ill course (week 1) and at the end of the course (week 6). A discussion of the table follows.

Table 8

*Numbers of Participants in Each Stage of the Reflective Process Week 1 and Week 6—Nursing of the Critically Ill Course—8 Participants*

<table>
<thead>
<tr>
<th>Stage Displayed by Participants</th>
<th>Week 1</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1—Return To Experience</td>
<td>1 (12.5%)</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Stage 2—Attend to Feelings</td>
<td>4 (50%)</td>
<td>0</td>
</tr>
<tr>
<td>Stage 3—Association</td>
<td>2 (25%)</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Stage 4—Integration</td>
<td>1 (12.5%)</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Stage 5—Validation</td>
<td>0</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Stage 6—Appropriation</td>
<td>0</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Stage 7—Outcome of Reflection</td>
<td>0</td>
<td>3 (37.5%)</td>
</tr>
</tbody>
</table>

In comparing the reflective stages from week one of the study to week six, it was noted that five of the eight participants (62.5%) increased their stages of reflection. Postings during week six of the study showed that one (12.5%) participant, Louise (a different participant from week one of the study) still placed in stage 1. Daniel posted at stage 3 (association) and Marie posted at stage 4 (integration). Five of eight participants
(62.5%) reflected in one of the higher stages (5, 6, or 7) of the reflective process. The biggest improvement in stage of reflection displayed was Veronica, who went from reflecting at stage 2 in week one to a stage 7 by the end of six weeks, an impressive overall improvement. Her stage 7 posting revealed that she developed a new perspective about her knowledge: “I learned today that I can answer the family’s questions. . . . I was very nervous, but I guess I do know something after all. . . . I have become more confident in my knowledge.”

These results show a marked improvement in reflective ability midway through the study and are a contrast to the results from halfway through Ip et al.’s (2012) study, which showed that 63.2% of participants reflected at stages 2, 3, or 4 and 13.2% at stages 5, 6, or 7. This could be because Ip et al. utilized second-year undergraduate nursing students whereas my study used fourth-year students. Those extra two years of education and experience could have made the participants able to engage in reflection at higher levels. Also, Ip et al. used reflective diaries as the data source to determine the reflective ability of participants. Smith and Jack (2005) found that students felt that keeping a reflective diary was difficult to do.

Garrison, Anderson, et al. (2010) stated that the asynchronous discussion board produced reflective and careful communication. The asynchronous discussion board of the online clinical post-conference in my study seemed to contribute to the increase in reflection. In the interviews, participants described how posting to the asynchronous discussion board encouraged them to reflect at higher stages. They cited reasons such as more time to think about what happened and the act of having to write down their thoughts.
Bob stated, “When I was posting all my information to the online post-conference, I would have to dig deeper and think about exactly what had taken place . . . I can just take my time and write everything out.” Veronica stated, “I took notes on my patient during the day. For the online post-conference, I would think back from the beginning of my day to the end, everything that happened, and then I would just write about it.” Daniel also spoke about time when he said, “The online post-conference gives us time to reflect.”

**Nursing Leadership and Management Course.** The next step in data analysis was to determine to what extent participants continued to engage in reflection during their second course, the Nursing Leadership and Management course. Stages of reflection in which participants reflected each week during the six weeks of the course are listed in Table 9. Following is a discussion of whether participants improved in their reflective ability from midway through the end of the study.

Five of the original eight participants took the Nursing Leadership and Management course; the other three participants graduated after completing the Nursing the Critically Ill course. At the beginning of the Nursing Leadership and Management course (week seven of the study), four of the five participants (80%) displayed increased stages of reflection compared to the beginning of the Nursing the Critically Ill course (week one of the study). Daniel was the only participant who did not increase his stage of reflection from week one to week seven; his stage decreased from a stage 4 (Integration) in week one to a stage 2 (attending to feelings) in week seven. This showed that the postings revealed the thought processes of the participants and uncovered what was uppermost in their minds at the time they posted. When asked about why this
Table 9

Stages of Reflection Evidenced by Participants—Nursing Leadership and Management

<table>
<thead>
<tr>
<th>Participant</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Daniel</td>
<td>2</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Veronica</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Ann</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Marie</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>7</td>
</tr>
</tbody>
</table>


decrease occurred, Daniel replied, “I don’t really know. I was more nervous this time, I guess, being on my own with a preceptor.”

Postings during week seven showed that four participants out of five (80%) displayed reflection in stages 2, 3, and 4. One participant, Veronica, showed evidence of being in stage 5 (validation). This data demonstrated that participants as a whole became better reflectors in the Nursing the Critically Ill course and continued to reflect at a higher level as they began the Nursing Leadership and Management course than they did when they began the study.

Comparing stages of reflections week seven and week twelve. Data were analyzed to determine the extent to which participants continued their development of
reflection during the *Nursing Leadership and Management* course. Table 10 compares the number of participants that placed in each stage of the reflective process at the beginning of the *Nursing Leadership and Management* course (week 7 of the study) and at the end of the course (week 12 of the study). A discussion of the table follows.

**Table 10**

*Numbers of Participants in Each Stage of the Reflective Process Week 7 and Week 12—Nursing Leadership and Management Course—5 Participants*

<table>
<thead>
<tr>
<th>Stages of Reflection</th>
<th>Week 7</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1: Return To Experience</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Stage 2: Attend to Feelings</td>
<td>1 (20%)</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Stage 3: Association</td>
<td>1 (20%)</td>
<td>0</td>
</tr>
<tr>
<td>Stage 4: Integration</td>
<td>2 (40%)</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>Stage 5: Validation</td>
<td>1 (20%)</td>
<td>0</td>
</tr>
<tr>
<td>Stage 6: Appropriation</td>
<td>0</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Stage 7: Outcome of Reflection</td>
<td>0</td>
<td>1 (20%)</td>
</tr>
</tbody>
</table>

At week 12 of the study, three of the five participants (60%) posted reflections in stages 2, 3, and 4. Veronica’s postings were classified as being in stage 6 (appropriation) and Marie’s were at stage 7 (outcome of reflection). These results were much higher than those obtained in Ip et al.’s (2012) study, where 73% of participants reflected in stages 2, 3, and 4 and only 13.2% reflected at stages 5, 6, and 7 at the end of the study.
Development of reflection from beginning of study to the end. To determine the extent to which participants developed in their ability to utilize reflection using the online clinical post-conference, data from week 1 and from week 12 were compared. Results of this analysis indicated that four of the five participants (80%) who completed both courses in the study finished the study posting reflections evidencing higher stages of reflection than when they started the study. This demonstrated a definite progression in reflective ability over the course of the study.

Results of this study showed that participants, using the asynchronous discussion board in the online clinical post-conference, reflected at relatively high stages. These data support the findings of previous research. Cooper et al. (2004) found that students explored their feelings and reflected more on their clinical practice by writing about it in online discussions as compared to speaking about it face-to-face (Hamera & Wright, 2004; Hermann, 2006; Kenny, 2002).

Participants of my study, in their postings to the online clinical post-conference, overwhelmingly shared knowledge that they had gained during their clinical day by reflecting about their day or in their research after their clinical day. This is very similar to what Brooks and Scott (2006) found in a study of the online postings of nurse midwives. Brooks and Scott discovered that, when an online discussion board was used, knowledge sharing and critical reflection became a very large part of the postings. The participants in my study, although only undergraduate nursing students, also engaged in the same practice, reflecting to develop knowledge that they shared for the purpose of improving their (and that of their fellow participants’) nursing practice.
Summary of the Development of Reflection

The development of reflection was examined in order to answer the first research question, what stage of reflection do participants exhibit when using an online clinical post-conference and do those stages increase over time? As shown by the data analysis reported in this chapter, participants exhibited all seven stages of the reflective process and evidenced an increase in stages over time by engaging in an online clinical post-conference.

Reflection began with a return to the experience that was evidenced by a detailed and accurate description of what was experienced (Boud et al., 1985). All participants reflected in stage 1 (return to experience) when they recounted their clinical days in great detail. Stage 2 (attend to feelings) was also well-represented in participant postings. Participants expressed both the positive and negative feelings and described how those feelings were related to learning. Five of eight participants (62.5%) displayed reflections in each of the association, validation, appropriation, and outcome of reflection stages. Participants who reached the outcome of reflection stage came to new understandings about the responsibilities of being a nurse.

At the beginning of the study, participants were not high level reflectors; their reflections were confined to the first four levels of the reflective process. By week six of the study (the end of the Nursing the Critically Ill course), five of the eight participants (62.5%) had increased their levels of reflection.

Week seven of the study began after a month-long Christmas break between semesters. During week seven (the beginning of the Nursing Leadership and
Management course), 80% of the participants reflected at higher levels of reflection compared to when they began the Nursing the Critically Ill course (week one of the study). This data demonstrated that participants carried the knowledge of how to reflect into the next course after time had passed, and they continued to reflect at higher levels. Using the asynchronous discussion board of the online clinical post-conference, 80% of the participants in my study displayed higher levels of reflection at the end of the study than when they started the study. This data demonstrated a definite development in reflective ability over the duration of the study.

**Analysis of Development of Inquiry**

After analyzing the data for evidence of reflection, the data analysis process was repeated to analyze for evidence of inquiry that participants evidenced. The aim of this analysis was to answer the second research question, what stage of inquiry participants do participants exhibit when using an online clinical post-conference and do those stages increase over time?

**Stages of Inquiry (Practical Inquiry Model) Displayed by Participants**

Garrison, Anderson, et al. (2000, 2001) developed their practical inquiry model (PIM) to describe how inquiry can be taught in online courses. The Practical Inquiry model has four stages: (a) state of dissonance, (b) exploration, (c) integration, and (d) resolution. Participant postings and transcripts were analyzed to determine how the participants’ inquiry thinking related to these four stages of practical inquiry. Criteria for the stages of the practical inquiry model and evidence of each stage displayed by
participants in postings to the online clinical post-conference are summarized in Table 11.

A discussion of the table follows.

Table 11

<table>
<thead>
<tr>
<th>Stage</th>
<th>Criteria</th>
<th>Participant Evidence</th>
</tr>
</thead>
</table>
| 1. Dissonance | Feeling of unease that is produced by some triggering event in the experience of the participant that produces a dilemma. Asking the right question | All participants evidenced this stage  
- “something wasn’t right”  
- “uneasy”  
- “it bothered me”  
- “it was puzzling to me”  
- “it sparked my interest”  
- “it was very interesting” |
| 2. Exploration | Search for information, knowledge or alternatives from various sources that might be helpful to them in solving their dilemma | All participants evidenced this stage  
- Asked students, instructors, unit nurses, preceptors, physicians  
- Searched resources on the nursing unit  
- Utilized resources at home |
| 3. Integration | Attempt to look for insights and to integrate knowledge and information they gained into a coherent thought or view. Determining how the new-found information relates to previously acquired knowledge. | Participants evidenced this stage  
- “I knew increasing the head of bed decreased his respiratory rate. After suctioning, his rate returned to normal.” (Bob)  
- Marie struggled with the dilemma of patients coming into the ER under the influence of drugs.  
- “I now know how to find information and answers to give the best care I can.” (Veronica) |
| 4. Resolution | The resolution of the issue and solution to the problem. Information stored for later use | Participants evidenced this stage  
- Stephanie found the answer to her question about her patient’s low blood pressure.  
- Daniel discovered the answer to his patient’s problem of urinary retention. |

**State of dissonance.** The state of dissonance, the first stage in the inquiry process, is a feeling of unease produced by some triggering event in the experience of the participant that produces a dilemma (Garrison, Anderson, et al., 2000, 2001). Participants described this stage of dissonance in many ways. They wrote, “something wasn’t right” (Sara), that certain circumstances made them “uneasy” (Bob), that “it bothered me” (Ann), and “it was puzzling to me” (Marie). Others used the words “it sparked my interest” (Veronica), “it was very interesting to me” (Daniel), or “I had never heard of this before” (Stephanie). One week, Sara’s dissonance emerged when she was told to do something that she felt was wrong. She wrote that she knew the action she was told to perform was wrong because a previous nursing instructor’s voice “was instantly in my ear, and I thought how could that be right?”

Another week, Bob experienced a communication problem with his patient who was on a ventilator and therefore could not speak. The patient was restless and trying to communicate with the nurses, but the nurses could not understand what the patient was trying to say. Bob and the nurses asked a number of questions about whether she was in pain or needed to be suctioned, but she would always shake her head no. Bob described his discomfort in this way, “I felt horrible about the situation. I felt like my stomach was in knots because I was not able to figure out this problem.” His discomfort led him to ask the question, “What is the best way to communicate with a patient on a ventilator?” This data supports the ideas of Dewey (1916) when he said that not knowing an answer creates a feeling of discomfort.
Veronica took care of a young (34 years old) patient who was in the end stages of heart failure. The only history the patient had was that he was diabetic. Veronica described her feelings of dissonance in this way: “I felt really sad for the patient. He was so sick and all he was worried about was who was going to take care of his mother . . . I could not imagine being so young and so sick.” Her discomfort with this situation led her to ask the question, “Why would such a young patient have such a bad heart?”

Stephanie was involved in a situation where her patient’s ammonia level was very high, her albumin and calcium levels were very low, and she was not ordered to have any treatment to correct these imbalances. Stephanie asked her nurse why the patient was not ordered to have corrective action taken. The nurse replied that the patient’s status was that she was NPO (nothing in by mouth) and the IV meds for the patient’s conditions were limited. The reasoning caused Stephanie to experience dissonance and she posted, “I was not satisfied with this answer.” This data supports the ideas of Profetto-McGrath et al. (2004) that individuals make sound decisions by critically challenging what they see, hear, and experience. The act of challenging starts the inquiry process that leads to learning.

**Exploration.** From the state of unease or dissonance, people search for information, knowledge, or alternatives that might be helpful to them in solving their dilemma (Garrison, Anderson, et al., 2000, 2001). All participants progressed to this stage at different points in the study, but not all explored to find answers to their questions consistently. Three times participants posted excellent questions, but made no attempt to explore the answers.
When participants engaged in exploration in an attempt to find answers to their questions, they did so in three ways. First, they asked other people questions, which included other participants, the unit nurses with whom they worked, their instructor, their preceptors, or physicians. Second, participants used resources that were available to them in the ICU, such as drug guides, a medical dictionary, and the patient charts; a couple of participants called the pharmacist with medication questions. Third, participants sought answers to their questions after clinical using resources that they had at home, including nursing textbooks, journal articles, and Internet websites.

A very interesting and surprising result that emerged from the online clinical post-conference was that participants researched questions or problems they or the other participants encountered and then posted online the supplemental resources (those other than required by the course) so that the group could learn from one another. For example, one week Marie wrote about her struggle to understand the family dynamics of her Japanese-American patient who, she and the nurses and doctors felt, should be placed into hospice care, but the family resisted. In a response that week, Sara provided a journal article on the Japanese-American culture that discussed end of life care.

In another instance, Sara questioned why her patient, who was diagnosed with atrial fibrillation, was not prescribed any cardiac medications. Later in the day, the doctor prescribed an anti-anginal medication, ranolizine. Sara went home, researched why her patient might be receiving this medication and linked a research article to her post.
Another example emerged when Bob cared for a patient who was diagnosed with tetanus. The patient was experiencing multiple episodes of what Bob originally thought were seizures. The physician came in and stated that the patient was having tonic rigidity from the tetanus, not general tonic/clonic seizures. Bob was not convinced, so, after clinical, he researched both possibilities for the patient’s behavior. In his post for that week, he related the information he found, explained the difference between the two (seizures and tonic rigidity), and posted the links to two excellent websites on tetanus.

Further data showed that Stephanie provided the group with a journal article and a website on hepatopulmonary syndrome because she cared for a patient with this diagnosis and stated she was unfamiliar with this syndrome. She assumed that the other participants were as unfamiliar and thus provided information that she had researched.

Four participants expressed that they had difficulty communicating with physicians in that they were hesitant and nervous about speaking with a physician. In response to them, Sara provided a website that discussed learning how to speak to a physician about the condition of a patient. She wrote, “Another great tool for communicating with physicians is the SBAR (Situation-Background-Assessment-Recommendation) technique. Did you learn about SBAR in another class? Here is a link posted below that offers information and a free downloadable checklist and worksheet.”

This data supports Vygotsky’s (1978) social constructivist learning perspective that states that people learn and solve problems by sharing ideas and opinions with others and Rentmeester’s (2006) finding that online discussion in online post-conferences encouraged
the sharing of ideas. Participants in my study used the online clinical post-conference to a great extent to share the results of their inquiries with others.

Integration. In the third stage of the practical inquiry model, people attempt to look for insights and to integrate knowledge and information they gained into a coherent thought or view (Garrison, Anderson, et al., 2000, 2001). Bob described the process he went through to get to the integration stage as he cared for a patient who was having blood pressure and respiratory problems in this way:

My biggest problem of the day was monitoring the patient’s blood pressure and respiratory rate. I was cautious in my monitoring because my assigned nurse said she had a feeling about him that something wasn’t right. When the patient had a drop in blood pressure I had to ask myself, “why did it drop? What can be done to increase it?” I heard the doctor ask the nurse to get levophed. I asked myself, “what is levophed?” I used my drug guide to see that levophed . . . is used to increase blood pressure. The best action of my day was critical thinking when my patient had a high respiratory rate. . . . I could hear him gurgling, and knew right then that he needed suctioned. After he was suctioned, I knew I was right because his respiratory rate returned to normal.

Marie worked her practicum hours in the emergency room. One night, she was assigned to care for a patient who was experiencing withdrawal from multiple illegal drugs. The patient stated that he just wanted “a prescription for Ativan to help with symptoms and to leave.” She struggled finding the answer to the question: “the police officers in the emergency room know that these patients are coming in using drugs, can
they arrest them if they try to leave and refuse treatment?” She stated that she “looked it up,” but failed to find a good answer and decided to ask a police officer the next time she was at the emergency room. However, she mused, “I would think that they [police officers] are not able to [arrest the patients who come in using drugs] because they [the patients] do not physically have drugs on them and have the right to refuse treatment.” This posting showed how she was struggling to make sense of the information she had and was trying to develop insight into the problem.

Veronica wrote, after her attempt to find the answer to a question, “I know that I will not know everything. As a new nurse, I will be in placed in many new situations. I feel that I do know how to find information and answers to give the best care I can.”

**Resolution.** The last step of the practical inquiry process produces the resolution of the issue and solution to the problem (Garrison, Anderson, et al., 2000, 2001). A majority of the time, participants in this study carried through with the inquiry process to this final step. Participants answered their questions, solved problems, and gained understanding. Importantly, they shared new insights with the group and often shared resources used to gain those insights so that all could learn.

In the online clinical post-conference one week, Stephanie wrote about how she worked through a puzzling problem dealing with the treatment of her patient’s low blood pressure. Her post exhibited how she progressed through all four steps of the inquiry process to arrive at resolution to the problem. She identified the problem, explored the answer to the problem by asking other people and looking up information in a journal article (which she posted her reference for the group), integrated the new knowledge gained
with what she knew before, and finally, came up with an answer and a solution to her problem. She posted this entry:

The puzzling problem I had [sic] the patient was ordered an extra saline bolus due to low blood pressure. I wondered, this patient has 3+ edema, she is full of fluid, on top of that she was receiving TPN [total parenteral nutrition], blood products, and another saline bolus. I thought that was too much fluid. . . . Why couldn’t she have vasopressors to try to bring her blood pressure up. . . . I had to look up some information in order to justify the answers and the interventions that were given.

Daniel provided a second excellent example of the inquiry process carried through to the resolution phase. Daniel was assigned to care for a patient who was admitted with heart failure and was complaining of burning and discomfort when he urinated. The patient had undergone a catheterization previously, and the nurses thought that the pain came from that procedure. They gave the patient pain medication and he went back to bed. However, something did not seem right to Daniel (dissonance). He asked, “Could my patient’s discomfort be coming from urinary retention and not from the catheterization procedure?” Daniel explored the answer to the question in several ways. He asked his preceptor if urinary retention could be the problem. He also looked at the patient’s chart and found out that the patient had received a diuretic medication, but only put out a small amount of urine. He performed a physical assessment on the patient and found signs of urinary retention. Daniel and the preceptor then performed a bladder scan, which showed that the patient had a large amount of urine in his bladder and provided the
Because Daniel was able to find the answer to his question and used that answer to solve the patient’s problem, the highest level of inquiry was obtained.

**Development of Inquiry Displayed by Participants**

To determine the extent to which participants developed in their ability to utilize inquiry at higher stages by engaging in an online clinical post-conference, participant postings were analyzed to determine how they evidenced inquiry and were assigned to one of the four stages of inquiry described by Garrison, Anderson, et al.’s (2000, 2001) model of practical inquiry. The stage of inquiry that participants displayed each week was recorded and compared to stages that participants displayed in earlier weeks to ascertain if participants progressed to higher stages of inquiry during the course of the study.

**Nursing the Critically Ill Course.** Eight participants took the *Nursing the Critically Ill* course, which constituted weeks one through six of my study. Table 12 includes the stages of inquiry displayed by participants weekly in the *Nursing the Critically Ill* course. Following is a discussion of the extent to which participants developed in their inquiry ability over the six weeks of the course.

The process of inquiry begins with asking questions. In the six weeks of postings in the *Nursing the Critically Ill* course, four of the eight participants had weeks where they did not post any questions; three participants (Sara, Louise, and Bob) had one week where they did not post questions while Daniel had three weeks where he did not post a question. This data indicates that participants were not always engaged in the process of inquiry. When asked in the interview why they did not post questions, participants stated
Table 12

Stages of Inquiry Evidenced by Participants Weekly—Nursing the Critically Ill Course

<table>
<thead>
<tr>
<th>Participant</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sara</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>No Qs</td>
</tr>
<tr>
<td>Stephanie</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Louise</td>
<td>No Qs</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Bob</td>
<td>4</td>
<td>4</td>
<td>No Qs</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Daniel</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>No Qs</td>
<td>No Qs</td>
<td>No Qs</td>
</tr>
<tr>
<td>Veronica</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Ann</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Marie</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>No Qs</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Note. No Qs = No questions asked, 1 = Dissonance, 2 = Exploration, 3 = Integration, 4 = Resolution.

that it was because they had no questions that week. This is discussed further in Chapter 5.

Sara, Louise, and Bob posted no questions during the weeks when their clinical assignment was to be monitor nurse, a position that required them to observe and analyze the cardiac monitors of all patients on the ICU. They were not actively involved in patient care that week, which could be why they did not ask questions to guide their practice; they stated that they felt this was an observation experience. This data supports the thinking of Dewey (1933) when he said that people inquire about topics that are
especially interesting to them. Participants engaging in what they considered to be strictly an observation experience did not seem to be interested or engaged enough to ask questions.

**Comparing stages of inquiry week one and week six.** Levels of inquiry were determined at the beginning of the *Nursing the Critically Ill* course (week one of the study) and at the end (week six of the study). Results of this analysis are contained in Table 13. A discussion of how participants progressed in their inquiry follows.

<table>
<thead>
<tr>
<th>Stage of Inquiry</th>
<th>Week 1</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>No questions asked</td>
<td>1 (12.5%)</td>
<td>2 (25%)</td>
</tr>
<tr>
<td>Stage 1—Dissonance</td>
<td>4 (50%)</td>
<td>2 (25%)</td>
</tr>
<tr>
<td>Stage 2—Exploration</td>
<td>1 (12.5%)</td>
<td>0</td>
</tr>
<tr>
<td>Stage 3 - Integration</td>
<td>0</td>
<td>1 (12.5%)</td>
</tr>
<tr>
<td>Stage 4 - Resolution</td>
<td>2 (25%)</td>
<td>3 (37.5%)</td>
</tr>
</tbody>
</table>

Participants began the study by displaying low levels of inquiry. In week one of the study, Louise did not engage in the process of inquiry at all as she asked no questions; half of the participants (Daniel, Veronica, Ann, and Marie) inquired at stage 1 (dissonance), where they asked questions, but did not seek answers to those questions. Stephanie inquired at stage 2 (exploration), while Sara and Bob carried their inquiries
through to the resolution stage. Bob described the resolution of his inquiry when he posted,

I noticed the increase in blood pressure and respiratory rate and researched what I needed to do. I felt a rush and acted and his respiratory rate decreased. It was a great feeling knowing what the patient needed . . . This is the first clinical I felt I really made a difference. It made me feel like a nurse!

By week six of the study, the stage of inquiry participants displayed had increased somewhat. Sara and Daniel asked no questions, Louise and Ann inquired at stage 1 (dissonance), and Bob inquired at stage 3 (integration), while Stephanie, Veronica, and Marie (37.5% of participants) carried through their inquiries to stage 4 (resolution). This data showed that participants developed in their ability to utilize inquiry during the first six weeks of the study.

*Nursing Leadership and Management Course.* After determining the stages of inquiry displayed by participants in the Nursing the Critically Ill course, the next step in data analysis was to determine to what extent participants continued to engage in inquiry during the second course, the *Nursing Leadership and Management.* Stages of inquiry displayed by participants each week are listed in Table 14. The discussion of the table follows.

Five participants continued on in the study and took the *Nursing Leadership and Management* course. In the first week of the course (week seven of the study), three of the five participants (60%), Daniel, Veronica, and Marie, displayed a higher stage of
Table 14

Stages of Inquiry Evidenced by Participants Weekly—Nursing Leadership and Management Course—5 Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Daniel</td>
<td>4</td>
<td>No Qs</td>
<td>No Qs</td>
<td>No Qs</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Veronica</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>No Qs</td>
</tr>
<tr>
<td>Ann</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Marie</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>No Qs</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note.* No Qs = No questions asked, 1 = Dissonance, 2 = Exploration, 3 = Integration, 4 = Resolution.


In week seven, all participants posted questions (thereby engaging in inquiry), one participant (Ann) inquired in stage 1 (dissonance), Bob in stage 2 (exploration), and three participants (60%), Daniel, Veronica, and Marie, reached the highest stage of the inquiry process, resolution. This data showed that participants remembered what they learned about inquiry during the *Nursing the Critically Ill* course and exhibited inquiry behavior over time. They were able to continue to inquire at relatively high stages.

**Comparing stages of inquiry week seven and week 12.** Two participants (Bob and Ann) increased their stage of inquiry from week six to week 12 of the study. Ann
posted the most dramatic increase in stage of inquiry of all participants; she advanced from a Stage 1 (dissonance) in week six to a Stage 4 (resolution) in week 12. When asked how she felt this occurred, Ann stated,

I knew that I had to have a question to post to the online post-conference, so I made sure to find something that I didn’t understand. Then I got interested in finding the answer because I knew that I needed to post about it. It made me learn stuff that I probably never would have.”

Table 15 compares the number of participants that placed in each level of the inquiry process at the beginning of the *Nursing Leadership and Management* course (week 7) and at the end of the course (week 12). A discussion of the table follows.

Table 15

*Numbers of Participants Placed in Each Stage of the Practical Inquiry Model—Nursing Leadership and Management Course—5 Participants*

<table>
<thead>
<tr>
<th>Stage of Inquiry</th>
<th>Week 1</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>No questions asked</td>
<td>0</td>
<td>1 (20%)</td>
</tr>
<tr>
<td>Stage 1—Dissonance</td>
<td>1 (20%)</td>
<td>2 (25%)</td>
</tr>
<tr>
<td>Stage 2—Exploration</td>
<td>1 (20%)</td>
<td>0</td>
</tr>
<tr>
<td>Stage 3 - Integration</td>
<td>0</td>
<td>2 (40%)</td>
</tr>
<tr>
<td>Stage 4 - Resolution</td>
<td>3 (60%)</td>
<td>1 (20%)</td>
</tr>
</tbody>
</table>

Table 15 shows that participants began the Nursing Leadership and Management course inquiring at relatively high stages. Three of the five participants (60%) carried
through their inquiry to the resolution stage. By week 12 of the study, stages of inquiry were still relatively high, but improvement from week one was variable. Veronica did not engage in inquiry that week (asked no questions), Daniel placed in stage 1 (dissonance), Bob and Marie placed in stage 3 (integration), and Ann carried through her inquiry to the resolution stage.

When participants were asked in the final interview why they did not engage in inquiry at higher levels at the end of the course, most stated some variation of the answer that they had “senioritis,” were excited to being close to graduation, and had other things to think about. I think this shows that inquiry is an active and deliberate process that takes time and practice to develop. When concerned about other issues, stages of inquiry were less than at times when students were more fully engaged.

**Development of inquiry from beginning of study to the end.** Even though weekly stages of inquiry varied somewhat up and down over the course of the study, it was interesting to note that the highest stage of inquiry, resolution, was achieved by seven of the eight total participants (87.5%) at some point during the 12 weeks of the study. Participants carried through their inquiry to the resolution stage 19 times, which resulted in an answer to the questions they posed or a solution to the problem. This data shows overall high stages of inquiry displayed by the participants.

Four of the five participants (80%) who completed both courses in the study finished the study by engaging in inquiry at a higher level than when they began the study. Only Daniel engaged in inquiry at stage 1 in week one of the study and ended the study engaging in inquiry at stage 1. This could have been because Daniel was the type
of person who liked to get things done quickly. He stated that he “did not like paperwork, I’m more of a doer than a writer.” These results show that participants definitely developed in their ability to utilize inquiry by engaging in an online clinical post-conference.

**Summary of the Development of Inquiry**

The inquiry displayed by participants was analyzed in order to answer research question number 2. The data analysis reported above shows that participants did develop in their ability to utilize inquiry by engaging in an online clinical post-conference.

Participants displayed evidence in their postings of all four stages of the practical inquiry model described by Garrison, Anderson, et al. (2000, 2001). Participants described experiencing dissonance and often asked questions about topics that bothered them. Most of the time, they explored answers to their questions, although three times they asked excellent questions, but did not search for answers. A noteworthy result that emerged from the online clinical post-conference was that participants not only researched questions or problems that they had, they also researched the answers to questions that other participants posted. They then posted the answers and provided online the supplemental resources (those other than required by the course) to both their questions and to the questions posed by other participants.

Participants engaged in the integration stage of inquiry less often and with some difficulty. Participants sometimes struggled to make sense of the information they had and were trying to develop insight into the problems they faced. A very positive result of this study is that much of the time, participants carried through with the inquiry process to
the final step of resolution, which resulted in an answer to questions, a solution to problems, and attainment of knowledge. Importantly, participants shared new insights with the group and often shared the resources used to gain those insights.

Participants began the study by displaying relatively low levels of inquiry. In week one of the study, one participant asked no questions, half of the participants inquired at stage 1 (dissonance), one participant engaged in inquiry at stage 2 (exploration), whereas two participants (25%) carried their inquiries through to the resolution stage. By week six of the study, the level of inquiry had increased somewhat as four of the eight participants exhibited higher levels of inquiry than in week one.

In week seven of the study (the first week of the Nursing Leadership and Management course), 60% of participants displayed a higher level of inquiry in their postings to the online clinical post-conference than they did in the first week of the study.

During the 12 weeks of the study, resolution was achieved by seven of the eight total participants (87.5%) at some point. Participants carried through their inquiry to the resolution stage 19 times, which resulted in an answer to a question or a solution to the problem. Eighty percent of participants finished the study by engaging in inquiry at a higher level than when they began the study. These results show that participants definitely developed in their ability to utilize inquiry by engaging in an online clinical post-conference.

**The Online Clinical Post-Conference, Reflection, and Inquiry**

Nursing clinical experiences require students to intimately care for complex patients in the nation’s health care facilities. The clinical post-conference, a pedagogical
tool universally used to assist nursing students to learn from their clinical experiences, consists of a debriefing experience that occurs after experiential learning.

The clinical post-conference is traditionally conducted in a face-to-face fashion at the end of the clinical day. The online clinical post-conference, an alternate format for this pedagogical tool, was used in this study. Data were analyzed to determine how the online clinical post-conference contributed to the development of reflection and inquiry in participants.

In the interviews, participants described how engaging in the online clinical post-conference enabled them to utilize reflection and inquiry. Participants listed the following benefits of the online clinical post-conference: time to think and reflect, knowing that others were reading what they wrote encouraged participants to write in greater depth, and reading others’ posts allowed participants to see other viewpoints.

Having more time to think and reflect was the most commonly listed benefit of the online clinical post-conference. Bob stated:

In the online clinical post-conference, you can just take your time to write everything out. You can really take a look back and think about what happened and what it all meant... You don’t have time to think while things are happening because you are too busy. You’re focused on what needs to be done and just trying to get through everything. Right after clinical, you are too tired to think. But, in the online post-conference, you can really think about what happened and what you learned from it.
Daniel agreed and said, “The online clinical post-conference gives us time to reflect.” Sara expressed the same idea, but expanded on it. She stated:

The online post-conference gives you some time to really think about what has happened during the day and then to go on and organize all of those thoughts, I think it’s more quality online. I think you get a bigger picture of the day’s events, the important stuff, instead of just little bits and pieces. And then it gives you time to respond to what other people have done or seen.

The interaction between participants in the online clinical post-conference was also listed as a benefit. Participants stated that knowing that others were reading what they wrote and were able to ask them questions encouraged participants to write in greater depth. They also stated that they learned by reading others’ postings. Marie stated, “What helped me most about the online post-conference is that I got asked questions, and then I would have to dig deeper either about how I felt or for information that I needed to find out what I didn’t know.” Ann stated, “There was questions that other people asked me where I was like, hm, I don’t know that, but I would then go dig a little deeper and get the information, which makes me a better nurse.” Veronica stated:

I personally liked reading everybody else’s stories because it gives you knowledge of like, if I was faced with that situation in the future, what would I do? I also liked it when I could sit and write about what happened to me and get others’ input of what they would do or if I did it right or wrong or whatever.

Stephanie stated:
I like reading other people’s postings to see how they thought about the day. It was nice to be able to ask them questions and I liked sharing my day to see what other people thought of what I did. People often asked me questions about things I hadn’t thought about.

Results of this study showed that participants, using the asynchronous discussion board in the online clinical post-conference, utilized reflection and inquiry at high stages. These data support the findings of previous research. Cooper et al. (2004) found that students explored their feelings and reflected more on their clinical practice by writing about it in online discussions as compared to speaking about it face-to-face (Hamra & Wright, 2004; Hermann, 2006; Kenny, 2002). In Guthrie and McCracken’s (2010) study, participants stated that the online discussions were “better” than writing a reflective journal because the discussions encouraged the exchange of ideas with other students.

Comparing Participant Views of Online Clinical Post-Conferences With Face-to-Face Post-Conferences

In previous nursing clinical courses, participants were required to take part in face-to-face clinical post-conferences that were held at the end of the clinical day. At several points in the study, participants made comments about the online clinical post-conference, comparing it to the traditional face-to-face post-conference. Because this study used an online clinical post-conference, the researcher explored further participant views of each version of the post-conference. During each of the two end-of-course interviews, participants were asked to describe their feelings about the online clinical post-conference and to compare the online version to the more traditional
face-to-face clinical post conference. Some participants stated that they preferred the online clinical post-conference while others favored the traditional face-to-face one, but all basically identified the same positives and negatives of each type.

**Face-to-Face Clinical Post-Conferences**

Participants related that they were “tired and hungry” at the end of a 10- or 12-hour clinical day and that they “just want to go home.” Daniel explained his feelings this way:

> When we did the on-site post-conference, it was . . . I mean, we were there for like an extra hour or whatever, so it was kind of like, okay, let’s go, hurry up. I’m not going to say much.

Veronica related a similar sentiment:

> Face-to-face, I guess you really don’t get a lot of information on anybody. Compared to online, you can look at everybody’s stuff and see more about their day, because only certain people share things, I guess, face-to-face, and everybody just wants to go home.

Conversely, participants also voiced positive ideas about the face-to-face version of the clinical post-conference. They stated that the face-to-face clinical post-conference “is convenient” (Marie), “I’d rather talk face-to-face” (Ann), and “I pay more attention when someone is telling me” (Veronica).

**Online Clinical Post-Conferences**

The one big drawback that participants identified about the online version of the clinical post-conference was the lack of emotion. Daniel explained it this way:
I’m more real when I am talking face-to-face with somebody or to a group. I understand the whole process; the whole reason behind it is we’re drained after clinical and it gives us time to reflect and everything, but I think, for me, I like hearing the tone of somebody’s voice, and I think it tells a lot about emotion and feeling. And with typing, there’s no tone, it’s just these words. I’m going to let more out in a group like when talking face to fact than I am just writing words on a computer screen.

Participants described many positive thoughts about the online clinical post-conference. All stated that in the online clinical post-conference everyone has the opportunity to share and no one gets “cut off.” Participants felt that they did not “have to hurry up to get out.” They liked the fact that they had time to go home, reflect about what happened during the day, and determine their feelings. Marie summarized their feelings, “I already ate, I’m comfortable, and I can take the time to write everything out.”

Participants also stated that they enjoyed reading the postings of the other participants because reading about the experiences of others let them see what happened during the clinical day. Participants thought another positive of the online post-conference was that they were able to question the other participants. They also felt it was a positive that others could ask them questions in return. Ann stated, “I liked that people asked me questions. I would then have to dig deeper to find the answers.” Most participants stated that they felt they learned more online.

Veronica summed up the issue about which version of the clinical post-conference is best when she said, “I like the online because you have to sit down and really think
about things, but the face-to-face is more convenient when you just want to get it done. However, you learn more online.”

**Summary**

This chapter presented the analysis of data to answer the research questions: how do students develop in their ability to utilize reflection and how do participants develop in their ability to utilize inquiry by engaging in an online clinical post-conference? Data examined included the postings of participants engaging in an online clinical post-conference and the transcripts of participant interviews. The data were presented utilizing the two concepts of the study, reflection and inquiry. Participants’ postings were examined to see what stage of reflection (based on Boud et al.’s [1985] model) and what stage of Garrison, Anderson, and Archer’s (2000) Practical Inquiry Model they exhibited. Postings from earlier weeks of the study were compared with postings made at the end of the study to determine if participants utilized reflection and inquiry at higher stages. A discussion of the findings is presented in the next chapter.
CHAPTER V

DISCUSSION OF FINDINGS AND IMPLICATIONS

Findings from this study demonstrated that participants developed in their ability to utilize reflection and inquiry in their clinical practice at higher stages by engaging in the online clinical post-conference. Participants began the study at relatively low stages of reflection and inquiry and progressed to higher stages of both during the course of the study. I feel that this progression occurred for a variety of reasons. One reason is that participants were expected to utilize reflection and inquiry in their clinical experiences and were required to post to the online clinical post-conference. Another reason for the progression is that participants expended time and effort in thinking about their experiences and composing their postings because they knew that the instructor and the entire class were reading them. In addition, participants asked each other questions in the post-conference that encouraged deeper thinking.

This chapter begins with a discussion of the major findings of the study organized by the research questions. A discussion of implications for nursing education and recommendations for further research are offered and discussed.

Discussion of the Findings

Reflection

Evidence of the stage of reflection displayed in the online clinical post-conference was examined in order to answer the first research question: What stage of reflection do participants exhibit when using an online clinical post-conference and do those stages increase over time?
The reflections displayed by participants in this study were in-depth because they evidenced much detail and deep thinking; they were educative because they enabled participants to learn from thinking about their experiences and the experiences of others. Sara posted:

I have yet to do post-mortem care and found yours (Marie’s) and Bob’s post to be very interesting. . . . I find it very beneficial that way we learn from each other. I am glad that you expressed how you felt about post-mortem care as this has made me explore my own feelings if I was facing the same situation.

Stephanie agreed and wrote, “From me reading your post, I feel like I have learned even more. You mentioned very good points here that I think all of us nursing students should take into account.” I saw that participants voiced this sentiment often in the study.

**Increase in stages of reflection.** At the beginning of the study (week 1), participants were not high-level reflectors; their reflections were confined to the first four stages of the reflective process (12.5% posted at stage 1; 50% at stage 2; 25% at stage 3; and 12.5% at stage 4). I was not surprised by this because, whereas reflection is required in many nursing courses, students are not given specific instruction in how to reflect; they are usually just told to write about their day. In addition, no other course utilized the online clinical post-conference as the venue for participants to display reflections and to receive feedback.

Week seven (of 12) of the study began for five participants after a month-long break between semesters and coincided with the beginning of the *Nursing Leadership and Management* course. At this time, four of the five participants reflected at lower
stages of reflection than at week 6. Reflection at high stages requires time and effort to accomplish; at this time participants were possibly more concerned with the task of becoming comfortable in their new surroundings. I attributed the slight decrease in stages of reflection to the fact that participants were adjusting to a new course and new clinical facilities. However, in spite of this decrease from week 6 to week 7, it is important to note that participants still evidenced higher stages of reflection than when they began the study. These data demonstrated that participants retained the knowledge of how to reflect even after a month had passed.

By week 12 (the end of the study), 40% of participants reflected in stage 6 or 7. This was a significant increase from the beginning of the study when the highest stage evidenced was 4. In addition, four of the five participants who completed both courses (80%) finished the study at higher stages of reflection than they started the study. I believe that this progression in stages of reflection occurred because participants, as part of course requirements, utilized reflection and inquiry in their clinical experiences and posted evidence of their reflections. Because they knew the instructor and entire class was reading (and commenting on) their postings, they spent time and effort thinking about their experiences and creating their postings. In addition, participants asked each other questions in the post-conference that encouraged deeper thinking. Sara stated,

Knowing others were reading about my experiences kept me on my toes. I felt that I had to write something of quality, so I thought more and harder about what happened in this clinical than I did in other courses.
Veronica’s Journey—a dramatic improvement. The biggest improvement in the stages of reflection displayed by all participants was Veronica. As shown in Table 16, Veronica demonstrated relatively consistent improvement in stages of reflection during the 12 weeks of the study. In week one, she reflected at stage 2 and increased in subsequent weeks (stages 2, 3, 4, and 6 in weeks 2, 3, 4, and 5). In week six, she demonstrated reflection in stage 7, the highest stage; this was an impressive overall improvement. Although Veronica reflected at stage 5, two stages lower than week six, she still reflected at the highest stage of all participants that week. She again reflected at stage 5 in week eight and increased her stage of reflection to stage 7 in week nine. Then she had a reversal and reflected at the lower stage 2 in weeks 10 and 11. She ended the study in week 12 by reflecting at stage 6.

Table 16

Veronica’s Stages of Reflection Each Week

<table>
<thead>
<tr>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 2</td>
<td>Stage 2</td>
<td>Stage 3</td>
<td>Stage 4</td>
<td>Stage 6</td>
<td>Stage 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 5</td>
<td>Stage 5</td>
<td>Stage 7</td>
<td>Stage 2</td>
<td>Stage 2</td>
<td>Stage 6</td>
</tr>
</tbody>
</table>

Note. Stage 1 = Return to Experience, Stage 2 = Attending to Feelings, Stage 3 = Association, Stage 4 = Integration, Stage 5 = Validation, Stage 6 = Appropriation, Stage 7 = Outcome of Reflection.

Based on this data, several questions came to mind. What was happening with Veronica that she progressed so well in stages of reflection? Why did she have the reversal in stages during weeks 10 and 11?

Veronica was a very serious and quiet student in class. She always seemed to be alert to what was going on in class and paid attention, but she never really contributed much to class discussions except when directly asked for her input. It seemed that she preferred to observe what was happening in class. She stated that she had previously taken five online courses and was very comfortable with online discussion. She seemed to be more at ease expressing her thoughts in the discussion board than she was in face-to-face situations.

When asked why she displayed reflection at high stages, Veronica stated, “I liked writing about my day. I could think back from the beginning of the day to the end, everything that happened, and just write it. Thinking back made things more clear to me, I guess.” She then described the process she used in reflecting:

I first looked over my notes that I took on my patient—just little notes I wrote about my patient during the day, what’s going on with them and how they’re acting during certain times. Little things that were changes in my patient, like anxiety or little changes in vital signs. Notes helped me to remember to write about everything that happened, then I thought back from the beginning of the day to the end, chronologically, about everything that happened. I thought about what everything meant. I felt like, oh, maybe this might be going on, just from what I’ve seen in other patients, and then I just write [sic] it.
The social aspects of the online clinical post-conference (being able to read others’ posts and having them read hers and ask her questions) seemed to assist Veronica’s journey toward high stages of reflection. She stated the following reasons why she felt she did well with her postings:

Online, you can look at everyone’s stuff. I liked reading other people’s posts to see how they thought about the day and what was going on. It’s nice to be able to ask questions, and I liked sharing my day to see what people thought, not from my point of view. Having them ask me questions of things I didn’t think about stimulated my thinking.

My feeling is that Veronica progressed to higher stages of reflection for several reasons. First, she was a student who was comfortable with posting to an online discussion because she had previously taken five online courses. Second, she devised an organized process that she used each week to reflect and she became better at it over time. Finally, the fact that others read her posts and asked her questions helped deepen her thinking and her reflections evidenced progressively higher stages as time went on.

However, Veronica did demonstrate reflections at stage 2 during weeks 10 and 11, which constituted a decrease in stage of reflection. When asked why this occurred, Veronica stated:

Those were weeks when I was really busy with other projects to complete and I had several tests to study for. I didn’t really have the time for in-depth posting those weeks. I posted what I thought about, but I was really anxious and worried about studying for my exams, so I concentrated my effort there.
This finding shows that reflection takes time and effort to complete at high stages. When Veronica had activities that she felt had higher priority, she spent less time on her reflections and evidenced reflections at lower stages. This finding was also seen with inquiry and is discussed later in this chapter.

**Inquiry**

The second research question explored the stages of inquiry that participants exhibited when using an online post-conference and whether those stages increased over time. As shown by the data analysis reported in Chapter 4, participants exhibited all four stages of the practical inquiry model (PIM) of Garrison, Anderson, et al. (2000, 2001) in their postings to the online clinical post-conference and they progressed to higher stages of inquiry over time. The process of inquiry begins with asking questions. In this study, participants asked a lot of questions—questions they asked themselves and each other, which stimulated deeper thinking. Marie stated:

> When I came across a situation I wasn’t sure of, something going on or someone’s disease, it helped me learn by asking questions. I could then ask the physicians or residents. You learn more by asking questions throughout your day.

Similarly, Bob stated, “In the online post-conference people would ask me questions and then I would have to dig deeper to find the answers. I learned a lot that way.” The act of questioning others showed that participants read each other’s postings, they were interested in what was being stated, and, most importantly, they were engaging in an inquiry-oriented approach to practice. Asking questions became a major part of their learning.
**Improvement in stages of inquiry displayed.** As with reflection, participants began the study by displaying relatively low stages of inquiry. This was an expected finding because while nursing faculty often utilize questioning as a learning technique, the teacher is the one who usually asks questions of the student. Nursing students are not normally expected to formulate questions about their clinical practice; they are more concerned with answering the teachers’ questions. As a college instructor, my goal is to encourage the development of critical thinking in students and I found that this method of asking questions did not necessarily move students to independence. Requiring them to ask questions about their clinical practice enabled participants in this study to critically evaluate their experiences. Stages of inquiry evidenced weekly by participants are outlined in Table 17.

In week one of the study, one participant asked no questions, half of the participants inquired at stage 1 (dissonance), one participant engaged in inquiry at stage 2 (exploration), whereas two participants (25%) carried their inquiries through to the resolution stage. Midway through the study (week six), the stage of inquiry had increased somewhat as four of the eight participants (50%) exhibited higher stages of inquiry than in week one. I think their levels increased because participants had read the weekly inquiry postings of others in the online clinical post-conference, thereby seeing examples of what the inquiry process looked like. Participants were interested in what their peers were saying in the online clinical post-conference.
Table 17

*Stages of Inquiry Evidenced by Participants Weekly*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Week 1</th>
<th>Week 2</th>
<th>Week 3</th>
<th>Week 4</th>
<th>Week 5</th>
<th>Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sara</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>No Qs</td>
</tr>
<tr>
<td>Stephanie</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Louise</td>
<td>No Qs</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Bob</td>
<td>4</td>
<td>4</td>
<td>No Qs</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Daniel</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>No Qs</td>
<td>No Qs</td>
<td>No Qs</td>
</tr>
<tr>
<td>Veronica</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Ann</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Marie</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>No Qs</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Week 7</th>
<th>Week 8</th>
<th>Week 9</th>
<th>Week 10</th>
<th>Week 11</th>
<th>Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Daniel</td>
<td>4</td>
<td>No Qs</td>
<td>No Qs</td>
<td>No Qs</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Veronica</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>No Qs</td>
</tr>
<tr>
<td>Ann</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Marie</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>No Qs</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

*Note.* No Qs = No questions asked, 1 = Dissonance, 2 = Exploration, 3 = Integration, 4 = Resolution.
In week seven of the study (the first week of the *Nursing Leadership and Management* course), three of the five participants (60%) displayed a higher stage of inquiry in their postings to the online clinical post-conference than in week one. This data showed that participants remembered what they learned about inquiry during the *Nursing the Critically Ill* course and exhibited inquiry behavior over time. They were able to continue to inquire at relatively high stages.

During the 12 weeks of the study, stage 4 (resolution) was achieved by seven of the eight total participants (87.5%) at some point, which indicated that participants engaged in high-stage inquiry. Participants carried through their inquiry to the resolution stage 19 times, which resulted in an answer to a question or a solution to the problem.

Sara reached resolution five times, and four participants (Stephanie, Bob, Ann and Marie) each reached resolution four times. When asked in the interviews how she used inquiry in practice, Marie stated, “I use it when I came across something I wasn’t aware of. . . . You can ask the doctors or nurses. It helps me learn by asking questions.” Stephanie wrote of inquiry, “I didn’t just scratch the surface, I dug deeper and that’s the why, the what, the how am I going to treat this?” I believe these participants engaged in inquiry because, as they read the reports of others’ inquiries in the online clinical post-conference, they discovered how much they learned from engaging in inquiry and were therefore motivated to produce high stage inquiries. Many participants (62.5%) finished the study by engaging in inquiry at a higher stage than when they began the study. These results show that participants definitely developed in their ability to utilize inquiry by engaging in an online clinical post-conference.
**Weeks of asking no questions or decreased stages of inquiry.** Participants were not always engaged in the process of inquiry. It was noted that five of the eight participants (62.5%) had weeks where they asked no questions. When asked in the interview why they did not post questions, participants stated that it was because they had no questions that week. These weeks of no questions often coincided with the weeks that participants were assigned to observation experiences, so they were not actively involved in patient care that week. The fact that they were not fully engaged in the clinical experience could be the reason why they did not ask questions to guide their practice; they were not interested enough or engaged enough in the experience to ask questions. This data supports the thinking of Dewey (1933) when he said that people inquire about topics that are especially interesting to them. This data offers new insight to nursing faculty on the value of observational experiences where students are not actively involved in patient care.

It was also noted that, in the last week of the study, participants seemed to exhibit lower stages of inquiry than they had in previous weeks. I could find no other studies that examined inquiry in this way in an online clinical post-conference so could not confirm or disconfirm the finding in the literature. When participants were asked in interview why they did not engage in inquiry at higher stages at the end of the Nursing Leadership and Management course, they all stated some variation of the answer that they had “senioritis,” were excited to being close to graduation, had several tests to study for, and generally had other things to think about.
This is similar to what Veronica related when she explained exhibiting lower stages of reflection during weeks 10 and 11 of the course. Dewey (1933) stated that interest is what motivated people to find answers to the problems that are troubling them. If students were not interested in the topic of the question or problem or in what they were learning, they would not reflect deeply or pursue finding an answer to the question. This was true in this study; the findings showed that when participants were preoccupied with other issues, i.e. graduation, exams, or assignments for other courses, or when they were engaged in strictly observation experiences, they did not engage in reflection and inquiry to the extent that they did at other times when they were more fully engaged in their clinical learning.

**The Effect of the Online Clinical Post-Conference on Reflection and Inquiry**

The research questions of this study provided for the investigation of the stages of reflection and inquiry participants exhibited when using the online clinical post-conference. Examining how the online clinical post-conference encouraged the use of reflection and inquiry by participants was determined through the analysis of written reflections and inquiries and interview data.

Results of this study indicated that the online clinical post-conference was an effective venue that encouraged the use of reflection and inquiry in baccalaureate nursing students. Participants in this study reflected at advanced stages and often carried their inquiries through to the resolution stage. These findings support the previous research, which found that that the asynchronous discussion board produced reflective and careful
communication and was a good means of encouraging inquiry (Garrison, Anderson, et al., 2010).

Participants listed the following benefits of the online clinical post-conference: time to think and reflect, writing of reflections and inquiries, the requirement of posting reflections and inquiries that others would read encouraged participants to write in greater depth (relating their experiences in greater detail and at higher stages of the reflection and inquiry), and reading others’ posts allowed participants to see other viewpoints.

**Time to think, reflect, and inquire.** In the interviews, participants described how posting to the asynchronous discussion board encouraged them to reflect and inquire at higher stages. Sara stated, “The online post-conference gives you time to think about what happened and to organize all your thoughts and it gives you time to respond to what others have done and seen.” These findings support the assertion of Boud, et al. (1985) where they stated that allowing the time and space for reflection to occur would augment the reflective process.

Because they had 48 hours after clinical to make a posting to the online clinical post-conference, all participants in this study stated that the online clinical post-conference gave them time to think and reflect on what they had learned and to research questions they had. This was not a new finding as many previous studies had previously found this (Babenko-Mould et al., 2004; Garrison, 2003; Posey & Pintz, 2006).

**Writing thoughts and ideas.** Writing thoughts and ideas in the asynchronous discussion board encouraged and enabled participants to display their reflections and inquiries; it also allowed participants to exhibit deeper reflection and a questioning
attitude, to become more involved in their own learning, and fostered interaction among the members of the group. This supports the findings of previous research, which found that writing in an online journal supported discussion and socialization (Daroszewski et al., 2004).

**Writing reflections.** The online clinical post-conference encouraged the development of reflection because it required participants to write down their reflections and provided a means of dialogue between participants. Sara stated:

Posting reflections in the online post-conference gives you time to really think about what has happened during the day and then to go on and organize and reflect on all of those thoughts . . . you get a bigger picture of the whole day and the important stuff, instead of just little bits and pieces.

Veronica agreed and stated, “It was all my reflection that I posted. I wanted to describe everything, what I did and why, and my feelings. I felt the more in-depth that I was, the better information I would be providing.” She later described how creating her postings encouraged her reflection; she said: “Writing about what happened in clinical in the online post-conference helped me to remember and to think. I looked at the notes I took during clinical and was able to put it all together.” Bob voiced similar thoughts when he said:

In life, I think I always reflect on what I do, but I never really thought much about it or used it in nursing before we started this. Using reflection made me think and, because we had to put it in writing, I can really see the process now. I see how I grew. Now I think more in-depth that what I used to. I think that reflection is a
good thing. It lets me look back on my day and piece it all together. I thought about what I had learned. Posting to the online post-conference helped me with that process.

This data shows that participants felt that reflection helped them learn and the act of writing their reflections in the online clinical post-conference made them want to reflect more deeply and in greater detail. Bob stated, “I just wanted to describe everything. I wanted to describe my feelings and what I did. I felt the more in-depth I was, the better information I would be providing. So, I just kept writing. I really learned a lot that way.”

This affirms the findings of previous research. Rentmeester (2006) found that online discussion in online post-conferences encouraged the sharing of ideas. Other researchers discovered that students were more apt to explore their feelings (Cooper et al., 2004) and tended to reflect more deeply on their clinical practice by writing about it in online discussions as compared to speaking about it face-to-face (Hamera & Wright, 2004; Hermann, 2006; Kenny, 2002). These findings also support my own experience, students provide more detail and reflect at higher stages by writing in the online post-conference than they do orally in face-to-face post-conferences.

**Writing inquiries.** The process of inquiry begins with asking questions. Dewey (1933) maintained that inquiry starts with a question, attempts to seek solutions, and makes the inquirer aware of their actions. Nurses who use an inquiry-oriented approach to their practice ask questions about their patients and then attempt to find out the answers to those questions. Asking questions and determining how to find the answers to those questions are the skills of lifelong learning (Justice et al., 2009). The data of this
study indicated that writing their inquiries in the asynchronous discussion board of the online clinical post-conference encouraged participants to ask questions, thereby engaging in inquiry. Marie stated:

We had to post questions to the online post-conference. So, when I came across something, like a situation I wasn’t sure of, something going on or someone’s disease, I would ask questions so that I would learn the answers. I found out that you learn more by always asking questions throughout your day.

In the online clinical post-conference, by posting their thoughts and reading the postings of others in the class, participants were encouraged to engage in inquiry at high stages. In seeking out answers to their questions, participants took charge of their learning in a new way and were willing to share their newly gained knowledge with others in the class.

**Having others read posts.** The requirement of posting reflections and inquiries to the online clinical post-conference their fellow participants would read promoted the development of reflection and inquiry in participants. Bob stated, “What I liked best about the online post-conference is that people read my postings and were able to ask me questions. Then I would have to dig deeper about how I felt or to get information that I didn’t know.” Dan agreed and stated, “I like when I can sit and write about what happened to me in clinical and get others’ input of what they would do or if I did it right or wrong.”

**Reading others’ posts.** Participants stated that reading the postings of fellow participants was beneficial. Dan stated, “I personally liked reading everybody else’s
postings because it gives you knowledge of, well, if I was faced with that situation, what I would do?” Marie agreed and stated:

Reading other students’ posts to the online post-conference definitely helps learning. You get to read about everyone’s experiences, how their day went, what they went through. If it’s something you went through, you can put your input about it. If it’s something that you haven’t gone through, you can ask questions and get everyone’s input.

Participants related that they enjoyed reflecting on their experiences and that asking and answering their and others’ questions was a valuable part of their learning. These data support the findings of previous research that found that students explored their feelings and reflected more on their clinical practice by writing and reading about it in online discussions as compared to speaking about it face-to-face (Cooper et al., 2004; Hamera & Wright, 2004; Hermann, 2006; Kenny, 2002).

**Social aspect of reflecting and inquiring in the online clinical post-conference.**

Reading others’ postings, having others read theirs, and commenting on the postings created a dialogue among participants and represented the social aspect of the online clinical post-conference. Benefits of the social aspect of the online clinical post-conference include: learning through dialogue with others and appearing knowledgeable to peers. These benefits will be discussed below.

**Learning through dialogue with others.** The reflective process can be carried out as a solitary activity, but doing so often leads to a reinforcement of existing views and perceptions (Boud, 2001). Working with a group whose specific purpose for existing is
learning encourages people to change their perspectives and challenge old patterns of learning. It is only through give and take with others that critical reflection can be promoted (Boud, 2001). Dialogue is important in the development of critical thinking in practice and the creation of a deeper understanding of reflection (Forneris & Pedin-McAlpine, 2007). Guthrie and McCracken (2010) discovered that online discussions were “better” than writing a reflective journal because the online discussions encouraged the exchange of ideas with other students. In addition, Babenko-Mould et al. (2004) found that online conferencing as part of a clinical practicum course promoted an atmosphere of community and encouraged students to connect, support, share, and learn together.

Findings from this study showed that the social aspect of the online clinical post-conference played a role in encouraging the participants to engage in reflection and inquiry at higher stages. Sara stated, “I think I learned just as much from the other students as I do from books and lectures. I learned from their mistakes and their accomplishments.”

Stephanie stated, “Things I didn’t know I would then look up online or in my books. I wanted to make sure that I knew what I was talking about when I made my post to the online post-conference. Because, if I didn’t know something, more than likely, somebody else doesn’t know either.” Veronica stated, “In the online post-conference, people offer information and you can ask questions. It’s nice to share your day to see what other people thought, to get a different point of view, and to have others ask me questions about things I didn’t think about.”
**Appearing knowledgeable to peers.** The social aspect of the online clinical post-conference provided another reason participants were encouraged to post insightful responses; they stated that they wanted to appear knowledgeable to the instructor and to their peers. Sara stated, “posting answers to questions kept me on my toes. I didn’t want the other students to think I was a slacker, so I researched my answers well.” Stephanie stated, “I learned so much from the others that I wanted to return the favor.” This finding is similar to what Rentmeester (2006) found in her study of associate degree nursing students, where students stated that they were often amazed at the level of knowledge displayed by some of their classmates in online discussions. This challenged them to contribute to the discussion and encouraged them to post the best answer so that they could earn the respect of their peers. In my study, this was another benefit of the online clinical post-conference.

These findings indicated that, by posting their reflections and inquiries in the online post-conference, participants learned from each other and were encouraged by others to think more deeply and therefore progress to higher stages of reflection and inquiry. These findings support previous research that found that reading of others’ experiences and responding in an online discussion board encouraged discussion that accomplished more than just fulfilling the course objectives (Daroszewski et al., 2004) and that asynchronous discussions encouraged students to consider their own and others’ perspectives (Garrison, 2003).

**A most interesting and surprising finding.** A very interesting and surprising finding that emerged from the study was that participants, in addition to seeking answers to their questions, shared their answers and posted supplemental resources to the online
clinical post-conference that enhanced the learning of the group. After a long clinical day, participants were interested enough and committed enough to research and answer questions about topics they dealt with in clinical; they posted the resources to the online clinical post-conference so that all other students could learn from them. Participants provided the class with journal articles or websites with information that answered the questions, none of which were required by the instructor. In response to her question about communicating with a physician, Sara posted, “A great tool for communicating with physicians is the SBAR (Situation-Background-Assessment-Recommendation) technique. Here is a link posted below that offers information and a free downloadable checklist and worksheet.”

However, participant involvement in the online clinical post-conference did not end with participants answering their own questions. Perhaps the most exciting finding of this study was that participants not only researched questions or problems that they themselves had, they also researched the answers to questions that other participants posted. They then posted the answers and provided online the supplemental resources (those other than required by the course) to both their questions and to the questions posed by other participants. Sara explained the reasoning she used:

When I read about questions that other people had, I was like, hm, I don’t know that either and I have to go dig a little bit, but now the information that I found, I can share with that person. And now, not only am I educated, so are they, which makes for two better nurses.
This finding is especially exciting because it shows that participants were engaged in learning to an extent that I have not seen before; they had a willingness to explore answers to questions and went beyond what was required because they wanted to gain knowledge. Participants carried inquiry through to the highest stage of resolution and then were willing to share the results of their inquiries with others. Most noteworthy is the fact that they were not required to explore answers to others’ questions; they did so because they were interested and actively wanted to learn. I believe that this is a result of the online clinical post-conference because the asynchronous discussion board engages students, gives them control over their learning, and provides them with time to reflect and to seek answers (Babenko-Mould et al., 2004; Garrison, 2003; Posey & Pintz, 2006). The social aspect of the asynchronous discussion board made them want to share knowledge with others (Guthrie & McCracken, 2010). This finding is of particular significance because I could not find it described in any previous literature.

Implications for Nursing Education

It has long been recognized that we need to transform nursing education, specifically clinical nursing education, to better meet the needs of the profession, healthcare facilities, patients and students. The National League for Nursing (NLN), in its Think Tank on Transforming Clinical Nursing Education, identified the most pressing problems of nursing education today. These included: rethinking how the time spent in clinical settings can be most effective in helping nursing students learn the practice, preparing students to make the transition from student to clinician, fostering inquiry and life-long
learning, and teaching students to implement reflective practice (Valiga & Kear, 2008).

This study offers some insight to meeting these needs.

The findings of this study have several major implications for nursing education. Nurse faculty should consider the role of reflection and inquiry in preparing nursing students to be lifelong learners and competent clinical practitioners, the importance of fostering inquiry as the foundation of evidence-based practice, and the online clinical post-conference as a venue to encourage the development of reflection and inquiry.

**Reflection and Inquiry and Lifelong Learning**

Although participants in this study experienced an overall growth in reflection and inquiry, they did not evidence a steady, progressive, growth each week; some weeks they went up and some they went down in the stages of reflection and inquiry demonstrated in the online clinical post-conference. The questions to be asked here are what made the difference and under what conditions would the online clinical post-conference work in the future? After reviewing the results of the study, the difference seemed to be that the weeks when students were fully engaged in their learning were the weeks when they advanced the stages of reflection and inquiry displayed in the online clinical post-conference. Weeks when they were less than fully engaged in their learning (as during observation experiences) or when they had other demands on their time (exams to study for or assignments in other courses to complete) were the weeks where they did not exhibit progressive growth in reflection and inquiry. I think these results show that reflection and inquiry are active, deliberate processes that take time, effort, and practice to develop.
Full engagement in the learning process is necessary for growth in reflection and inquiry. Participants evidenced higher stages of reflection and inquiry when they were actively engaged in patient care and when they were willing and able to spend the time and effort required to fully engage in reflection and inquiry. This has implications for nursing education because nursing faculty should examine ways of fully engaging students in clinical learning and motivating them to want to spend time and effort on their learning. One recommendation is that nursing faculty should rethink the use of observation experiences because they don’t seem to engage students as much as active clinical experiences.

In a rapidly changing health care field, it is necessary that nursing students be taught the skills of lifelong learning which enable nurses to remain current in the field throughout their careers. The nursing profession and society expect that nurses continue to learn throughout their careers. In addition to teaching core nursing knowledge, nursing education programs must provide their graduates with the means of becoming life-long learners (Justice et al., 2009).

Lifelong learning occurs when people learn from their experiences (Schön, 1983) and reflection enables nurses to learn from their experiences (Dewey, 1938; Johns, 2004; Schön, 1983). Development of an inquiry-based practice is another approach that enables students to learn from their experiences throughout their careers (Dewey, 1938; Schön, 1983).

It has been suggested that lifelong learning and the development of a reflective, inquiry-based approach to practice can be furthered by participation in communities of
practice, where learning through practice and from peers is fostered by regular interactions (Wenger, 1998). One of the principles of communities of practice is learning from a shared reflective experience (Marken & Dickinson, 2013). The information gained in this study could be used to support the creation of communities of practice for nursing students as they enter the profession as practitioners as well as for practicing nurses to foster professional development and continuing nursing education because communities of practice can exist online through asynchronous discussion boards (Marken & Dickinson, 2013).

In my past experience, many nursing students do not actively ask questions, they are content with allowing the instructor to ask the questions. Requiring students to ask questions about their experiences encourage them to dig deeper into situations and to think about what is happening (Dewey, 1938). The results of this study confirmed that, with guidance and time, nursing students learned to inquire at high stages. Nursing faculty should consider that the online clinical post-conference encouraged the development of an inquiry-based practice and should utilize reflection, inquiry and the online clinical post-conference in their clinical nursing courses.

**Fostering Inquiry as the Foundation of Evidence-Based Practice**

In today’s health care environment, quality and cost are of major importance. Nurses are under great stress to deliver care that produces quality outcomes at the lowest cost. Evidence-based practice (EBP) has emerged as the preferred paradigm of care (Melnyk, Fineout-Overholt, Stilwell, & Williamson, 2009) to accomplish this aim.
In the past, nurses often engaged in practices that were tradition-based, but were not supported by evidence. They followed hospital policies without questioning the relevance or accuracy of those policies (Melnyk et al., 2009). Although this practice still continues, the nursing profession has espoused the more outcome-driven paradigm of care, evidence-based practice (EBP). EBP is a problem-solving approach to providing care that incorporates evidence from patient care data and research studies, patient preferences and values, and clinician expertise to produce the highest quality of care and best patient outcomes (Melnyk et al., 2009).

EBP starts with a spirit of inquiry, an ongoing curiosity about what is the best evidence to guide clinical decision making and continues when nurses actively seek out evidence to answer those questions. A spirit of inquiry is evidenced when nurses consistently ask questions about the care they deliver. The Institute of Medicine has stated that by 2020, 90% of all health care decisions in the United States will be evidence-based (Olsen, Aisner, & McGinnis, 2007), but the majority of nurses are still not consistently implementing EBP in their clinical settings (Melnyk et al., 2009). They do not ask questions about the care they are delivering. Nurses must be inspired to possess a spirit of inquiry and be educated to routinely and consistently ask questions about current clinical practices while they are delivering care. Nurse faculty must teach nursing students the method and importance of using inquiry in their clinical practice to prepare them to utilize EBP. The results of this study have shown that incorporating inquiry with the online clinical post-conference has enabled participants to evidence inquiry at higher stages.
Incorporating Reflection and Inquiry Using the Online Clinical Post-Conference

In the busy world of clinical nursing practice, students often do not make reflective learning or an inquiry-based approach to learning a high priority unless reflection and inquiry are part of the formal grading criteria of the course (Ip et al., 2012). Nursing students in clinical courses are often overwhelmed by the fast-paced and hectic environment of nursing units in today’s hospitals and are intent on learning and applying the basics of nursing practice to the care of their patients. They often focus on simply getting skills and tasks completed. Data in this study confirm that, when reflection and inquiry are incorporated into nursing clinical courses, students progressed from a low-level task orientation of learning to one that includes reflection and inquiry at high stages.

Therefore, nursing faculty, as part of clinical education programs, need to structure course learning objectives that encompass reflection and inquiry and should incorporate a pedagogy that encourages reflection and inquiry. The findings of this study indicate when participants were given the opportunity to reflect and inquire using the online clinical post-conference, they progressed to higher stages of both reflection and inquiry over time. The online clinical post-conference has been shown to be an innovative pedagogical tool that supported a learner-driven dialogue that was participatory and interactive (Meziros, 1998); in addition, it promoted reflective thinking and inquiry in participants.

In my study, participants stated they were comfortable sharing reflections and inquiries in the asynchronous board of the online clinical post-conference. In fact, they stated that knowing others were reading what they had written inspired them to write in greater depth and detail. The online discussion format afforded all participants the chance
and time to express their views and they took advantage of it. In my previous experience with courses that included the face-to-face post-conference, class discussion was conducted more superficially and not all students offered to share their views. When they did speak, most did so only to answer the instructor questions and did not expound to a great depth on their experiences. The difference in this study was the online clinical post-conference. Nurse faculty should consider incorporating the online clinical post-conference in all clinical courses.

**Other Benefits of the Online Clinical Post-Conference**

In addition to assisting students to engage in reflection and inquiry at higher stages, the online clinical post-conference also provided a way for the researcher to determine exactly what the participants were thinking. In this study, participant postings provided a view of what participants were learning and what questions they were asking. Using that information, I could then provide students with requested learning experiences, refine their thinking by asking for more detail, and guide them to the next stage of reflection and inquiry. This process greatly enhanced learning and constitutes a new pedagogy for clinical nursing education.

The findings of this study have shown that the online clinical post-conference offers many benefits to students. In addition to providing a venue for student-student interaction, it also afforded increased interaction between student and teacher. Nurse educators should include the online clinical post-conference in all clinical nursing courses because of the benefits to student learning it provides.
Further Implications and Questions

Findings from this study indicated that participants developed in their ability to utilize reflection and inquiry to a large extent due to the social aspect of the online clinical post-conference. Participants stated that knowing that others were reading their postings stimulated them to reflect and inquire more deeply and to learn more. This raises questions that maybe we should rethink the fundamental theory of teaching and learning in nursing education.

The goal of nursing education is to produce graduates who are critical thinkers, problem solvers, and competent clinical practitioners able to practice in the very complicated health care environment of this nation. Much of nursing education is individual-based and outcome-based. Its aims are to encourage nursing students to progress to the higher level orders of thinking of application, analysis, synthesis, and evaluation based on Bloom’s et al.’s (1956) taxonomy and to prepare students to pass the national licensing exam (NCLEX-RN). Most of the time, students learn individually by reading textbooks and listening to lectures and often state that they would rather “do nursing” than read about it in a book or hear about it in lecture. Perhaps we should investigate whether a social constructivist theory of teaching and learning in nursing education would better serve to produce competent graduates who are ready to practice in today’s world and if an inquiry-based curriculum produces better practitioners and lifelong learners than an outcome-driven one. Additional questions that might be raised by this study include: how would the use of reflection and inquiry-based education impact testing, particularly NCLEX testing? Would outcomes be better or worse?
A further implication for this study is that reflection, inquiry, and the online discussion board might be useful not just for nursing students, but for practicing nurses as well. It merits examination to determine if the professional development of practicing nurses is fostered by a reflective, inquiry-oriented practice.

**Recommendations for Further Research**

This qualitative study extends the sparse literature on the use of reflection and inquiry in an online environment by demonstrating that participants increasingly engaged in reflection and inquiry at higher stages by engaging in an online clinical post-conference conducted using an asynchronous discussion board. The use of reflection and inquiry in nursing education utilizing the online clinical post-conference warrants further investigation. In addition to examining reflection and inquiry as separate processes, studies could be conducted to determine if using both reflection and inquiry together as reflective inquiry produces benefits to nursing students.

This study only examined online clinical post-conference postings of senior baccalaureate nursing students at one university. To validate the results of this study on a wider scale, the study could be replicated using students in different universities and with different classes (sophomore or junior) of nursing students to determine whether the stages of reflection and inquiry displayed in the online clinical post-conference vary with the amount of education of the student.

Other pertinent questions for further research might be whether the level of education of the student (baccalaureate versus associate degree) makes a difference in the stages of reflection and inquiry displayed. This study could also be replicated using other
professional students in the health care or education fields, that is, physical therapy, occupational therapy, respiratory therapy, or medical students, to see if reflection and inquiry could be used to support the growth and development and competence of students preparing for practice in other professions in the health care field.

Participant postings to the online clinical post-conference for 12 weeks in two clinical nursing courses were examined in this study. The findings indicated that participants continued to engage in reflection and inquiry at high stages for the duration of the study, even after a one month break between semesters. Further research could be conducted to study nursing students over a longer time period as they begin professional practice to determine if they continue to engage in a reflective, inquiry-oriented practice.

This study only examined the highest stage of reflection and inquiry displayed by participants each week; future studies could investigate whether more than one stage of reflection or inquiry could be exhibited in postings. In this study, participants were given guidelines, or scaffolding, to provide instruction on how to reflect and inquire. The types of guidelines, or scaffolding that were most effective in promoting the development of reflection and inquiry were not studied. Different types of guidelines or other interventions could be examined to determine which are most beneficial in promoting reflection and inquiry in nursing students.

In this qualitative study, participants stated that they felt the online clinical post-conference was an effective venue that encouraged the use of reflection and inquiry. Quantitative studies to measure the effect of the online discussion on the development of reflection and inquiry and to evaluate the effectiveness of strategies that facilitate the
It would also be interesting to conduct a study that directly compares the effect of the online versus the face-to-face clinical post-conference on the development of reflection and inquiry.

Investigating ways that reflection-in-action might be taught to nursing students could be topics of additional research. In addition, future studies might explore how nurses could be taught to engage in reflection-for-action (pre-action reflection or anticipatory reflection). Reflection-for-action is used to prepare practitioners before action and enables them to develop a plan for action in case unforeseen circumstances arise and thereby to minimize problems that might occur (Ong, 2011).

Previous research found that the role of the teacher is significant in ensuring learning (Hsu, 2007). Teacher behaviors that promoted reflection included: spending time with students, asking open-ended questions which encouraged students to think and to question assumptions and possibilities (Burton, 2000), and developing a nurturing environment where students felt safe to explore their innermost thoughts and feelings (Fabro & Garrison, 1998). Additional studies could be conducted to determine which teacher behaviors best promote reflection and inquiry in an online clinical post-conference.

Participants in this study did not always follow through with all four steps of the practical inquiry model to achieve resolution, or an answer, to their question or problem. However, since previous studies have suggested that resolution could be gained if the right questions are asked in an online discussion (Hsu, 2007), further studies could be conducted to evaluate the level of questions asked by students and teachers in online clinical post-
conferences or to examine the role and the effectiveness of the teacher in facilitating the achievement of resolution using the online clinical post-conference.

**Conclusion**

Much information of importance to nursing education was gained by this study; the findings extended the work of previous researchers in the areas of reflection and inquiry and offered new information on the use of reflection and inquiry using the online clinical post-conference. The study utilized the online clinical post-conference as a venue to encourage the use of reflection and inquiry and described a method that can be used to require (and assist) nursing students to engage in reflection and inquiry in their clinical experiences.

The information revealed by this study indicated that baccalaureate nursing students could reflect and inquire at high stages. Encouraging the development of a reflective and inquiry-oriented practice in nursing students provided a way for them to learn from their experiences and to develop the skills of life-long learning. The venue of the online clinical post-conference was shown to be useful in encouraging students to reflect on their practice, to learn from their experiences, and to appropriately engage in inquiry. Findings from this study demonstrated that the online clinical post-conference is an engaging pedagogical tool that encourages the use of reflection and inquiry at high stages in nursing students. The most exciting finding of this study was that participants (although not required) showed the initiative to research the answers to questions that other participants posted, posted the answers to those questions, and shared the resources (journal articles or websites) they used. This finding showed that the participants were
engaged and interested enough in their learning to expend the time and effort to search for answers. Participants learned from each other this way.

The findings of this study could be used by nurse educators to change their pedagogy to produce nurses who learn from experiences and are lifelong learners. Nurse faculty should consider incorporating the online clinical post-conference in all clinical courses.
APPENDICES
APPENDIX A

INITIAL EMAIL SEEKING STUDY PARTICIPANTS
Appendix A

Initial Email Seeking Study Participants

To students enrolled in N40010 - Nursing of the Critically Ill,

As many of you know, I am in the process of completing my PhD program. I will soon be starting my dissertation research. I am writing to you today because you are enrolled in N40010 ‘Nursing the Critically Ill’ at the Salem campus for the fall semester of 2011 and I would like to invite you to participate in my dissertation research study. The study will look at how reflection and inquiry support the growth and development of baccalaureate nursing students. This study could potentially benefit you and nursing education and future nursing students. Clinical education has always been a large part of nursing education. Knowledge gained about the use of reflection and inquiry and the online clinical post-conference could add another dimension to clinical nursing education. The results of this study could provide new knowledge and new ways of encouraging development, reflection, and inquiry in nursing students. I do not anticipate that there should be any risks to you in participating in this study.

If you choose to participate in this project, you will participate in the study in N40010 ‘Nursing of the Critically Ill’ in the fall semester of 2011 and N40045 ‘Integration of Leadership and Management in Nursing’ in the spring semester of 2012. As part of both these courses, you will receive an introduction to the concepts of reflection and an inquiry approach to learning and practice during the first week of each course and additional instruction each week during class. This instruction will consist of information about the theories of reflection and inquiry, the importance of each to the clinical practice of a nurse, and the steps of engaging in both.

You will be asked to jot down your reflections and the puzzling problems or questions that occur during the course of the clinical day and you will be asked to post a reflection to an online clinical post-conference. As is normal for these classes, you will be asked to read and comment on other students’ postings to the asynchronous discussion board.

Finally, you will be interviewed so that I can gain an understanding of your experience using reflection and inquiry in your learning and clinical practice and to see if you felt participating in the online clinical post-conference contributed to the development of their reflection and inquiry skills.

Participation in this study is strictly voluntary and will not affect your course grade in any way. If you decide to participate, you may withdraw from the study at any time with no penalty or ill effects to you.

If you would like to participate in this study, please email me back (kzapko@kent.edu) to let me know. I thank you very much for considering being in my study.

Karen A. Zapko, MSN, RN, PhD-C
Assistant Professor—College of Nursing
Kent State University—Salem Campus
APPENDIX B

INFORMED CONSENT TO PARTICIPATE IN RESEARCH STUDY
Appendix B

Informed Consent to Participate in Research Study

**Study Title:** *Learning to be Clinical Practitioners: An Investigation of the Use of Reflection and Inquiry to Support the Growth and Development of Baccalaureate Students in Nursing Education.*

**Principal Investigator:** Karen A. Zapko, MSN, RN

You are being invited to participate in a research study. This consent form will provide you with information on the research project, what you will need to do, and the associated risks and benefits of the research. Your participation is voluntary. Please read this form carefully. It is important that you ask questions and fully understand the research in order to make an informed decision. You will receive a copy of this document to take with you.

**Purpose:**

The purpose of this basic interpretative and descriptive qualitative study is to explore how reflection and inquiry support the growth and development of baccalaureate students in nursing education.

**Procedures**

Participants in this study should be enrolled in N40010—”Nursing of the Critically Ill, in the fall semester of 2011 and N40045—”Integration of Leadership and Management in Nursing’ in the spring semester of 2012. As a participant in this study, you will receive an introduction to the concepts of reflection and an inquiry approach to learning and practice during the first week of each course and additional instruction each week during class. This instruction will consist of information about the theories of reflection and inquiry, the importance of each to the clinical practice of a nurse, and the steps of engaging in both.

You will be asked to jot down your reflections and the puzzling problems or questions that occur during the course of the clinical day at least once per hour. You will turn those papers in to the researcher weekly after the clinical experience has occurred. Only you and I will be able to see the information on these papers as they will not be shared with the group.

In addition, you will be asked to post a reflection to the more visible asynchronous discussion board which constitutes the online clinical post-conference. This posting to the online clinical post-conference is required for all students in the course. As is normal for
the class, you will be asked to read and comment on other students’ postings to the asynchronous discussion board.

Finally, you will be interviewed so that I can gain an understanding of your experience using reflection and inquiry in your learning and clinical practice and to see if you felt participating in the online clinical post-conference contributed to the development of your reflection and inquiry skills. You will be interviewed twice—once at the end of the ‘Nursing the Critically Ill’ course and again at the end of the ‘Integration of Leadership and Management in Nursing’ course. These semi-structured interviews will be audiotaped and conducted one-on-one and face-to-face at a mutually agreeable time.

If you choose to participate in this project, you will be asked to give consent for us to examine your reflection papers from your clinical day, transcripts of your postings in the online clinical post-conference, and transcripts from your interviews. We will be looking for trends that indicate the presence of reflection and inquiry.

Your participation in this study is expected to last for the duration of the two clinical courses, ‘Nursing the Critically Ill’ and ‘Integration of Leadership and Management in Nursing’.

**Audio and Video Recording and Photography**

The one-on-one interviews to be conducted at the end of each course will be audiotaped. Transcripts will be made of the audiotapes for the purpose of data analysis. Audiotapes will be erased at the end of the study.

**Benefits**

The potential benefits of participating in this study may include:

- You will receive sustained instruction on how to incorporate reflection and inquiry into your practice; this knowledge might improve your clinical practice and help to make you a better nurse.

- As a nursing student, you have been taught the importance of research. You may feel gratified that you are participating in research the might benefit the cause of nursing education and help us to deliver better education to future nursing students.

- Clinical education has always been a large part of nursing education. Knowledge gained about the use of the online post-conference could add another dimension to clinical nursing education. The results of this study could provide new knowledge and new ways of encouraging reflection and inquiry in nursing students and of producing better practitioners.
Risks and Discomforts

There are no anticipated risks beyond those encountered in everyday life. As a student, you are normally required to post to online discussion boards as part of your class requirements. I will not be the instructor in the course, so I will not be responsible to assigning your course grades.

Privacy and Confidentiality

Your privacy and confidentiality will always be protected; no identifying information will be collected for the purpose of this study. Your signed consent form will be kept separate from your study data. The online postings will be part of a Vista course and as such, are password protected and only visible to people enrolled in the class.

Your name will never be used in reporting of data as all documents and transcripts will be assigned pseudonyms All papers, transcripts of the online postings, and transcripts of the interviews will be kept (either in paper format or on a USB drive locked in a file cabinet located in my office (currently located in Room 127 of Kent State University, Salem Campus) and will not be shared with anyone outside of the research team.

Compensation

You will receive a small notebook to be used to record your reflections during the clinical day and a small thank you gift for participating in the study. These gifts will not be used in recruitment or as compensation. Instead, they will be used to express thanks & appreciation for you sharing of your time and reflections with us. No further compensation will be given.

Voluntary Participation

Taking part in this research study is entirely up to you. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. You will be informed of any new information that may affect your health, welfare, or willingness to continue your study participation.

Participation in this study (or choosing not to participate in this study) will not affect your grade in either the ‘Nursing the Critically Ill’ nursing course or the ‘Integration of Leadership and Management in Nursing’ course.

Contact Information

If you have any questions or concerns about this research, you may contact Karen A. Zapko at (330) 337-4224 or Dr. Teresa Rishel at (330) 672-2580. This project has been approved by the Kent State University Institutional Review Board. If you have any
questions about your rights as a research participant or complaints about the research, you may call the IRB at 330.672.2704.

**Consent Statement and Signature**
I have read this consent form and have had the opportunity to have my questions answered to my satisfaction. I voluntarily agree to participate in this study. I understand that a copy of this consent will be provided to me for future reference.

_________________________  ______________________
Participant Signature          Date
APPENDIX C

DEMOGRAPHIC DATA SHEET
## Appendix C

### Demographic Data Sheet

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>2. Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Race / Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. How many years of college education have you had?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. How many online courses have you taken?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. How comfortable would you say that you are in recording your thoughts in discussion questions on the computer?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D

ONLINE CLINICAL POST-CONFERENCE GUIDELINES
Appendix D

Online Clinical Post-Conference Guidelines

Part of your clinical experience for this course will include online clinical post-conferences. The online post-conference is an asynchronous learning environment where you are expected to provide a debriefing on your clinical experience. The online post-conference will provide you with the opportunity to reflect on your learning on each clinical day. I am also asking you to develop an inquiry approach to your learning. Think about the questions you should be asking—and answering during your clinical day. You will be asked to report on clinical learning, describe and analyze the care you provided, and share your feelings and perceptions about the experience. You will receive feedback from the instructor and peers.

Rules
✓ DO NOT refer to any clients by name (keep this confidential).
✓ ALL information in this discussion forum is to be kept confidential and not shared outside of the online classroom.
✓ DO NOT simply provide a laundry list of activities performed during clinical.
✓ DO NOT post superficially. I am looking for some depth and evidence of reflection and inquiry.
✓ Read ALL posts and reply substantively to at least 2 classmates (see guidelines for posting below).
✓ Your initial posting is due within 48 hours of the clinical experience. You must read the postings of your fellow classmates and respond substantively to at least two of them. These responses must be completed by Saturday at 5:00 p.m. In addition, you must respond to all questions directed to you by either the instructors or your fellow classmates so check back to the discussion boards frequently.
✓ The posts will remain available for replies through Monday 8am following the clinical day. If you do not participate in online post-conferencing you will receive an “unsatisfactory” for the clinical day.

Satisfactory Clinical Posting Criteria

Reflection
1. What did you learn this day about nursing? Please talk about “3 Surprises and a Wish”. Describe 3 things that you learned today in your clinical experience and 1 thing you wish you had been able to learn.
2. Describe and analyze care you provided to the clients you cared for this day. What were you trying to achieve this day? What sources of knowledge did you use and what factors influenced the decisions you made about your care this day?

3. Conclude by summarizing how you feel about your experience this day. What went well, what did not go so well, and what you are going to do better next clinical?

Inquiry
4. What puzzling problems did you encounter during your clinical day? Please share with us these problems and the questions that came to your mind as you participated in clinical this day. What sparked your interest? This could be something related to the patient or something related to your learning. Do not list some superficial question, but one which will improve your practice and your patient care. I am looking for depth and critical thinking here. Do some research to answer your problem or question and post both your problem/question and the solution/answer that you decided fit the situation best. Describe the process you used in determining the answer to your problem or question.

Sharing
5. Reply to 2 or more classmate’s postings: share experiences, offer insights, ask questions, make connections between classroom learning and clinical activities. You can also identify helpful literature and informational resources/materials for the discussions. Here is where you will learn from each other. Your postings should not be limited to anecdotal comments about your personal or professional work experiences without adding some insights from the readings related to the course focus, or other scholarly information. In other words, make your postings substantive. Include your references for all postings. Do not just write “I agree” or “I like how you think.” Add something to the discussion.
APPENDIX E

QUESTIONS FOR THE FIRST INTERVIEW
Appendix E

Questions for the First Interview

1. How did you use reflection in your clinical learning?

2. What process did you use when you sat down in front of the computer to write your postings?

3. How have you made sense of this experience in light of past experiences and future practice?

4. How do you now feel about this experience?

5. How has this experience changed your ways of knowing?

6. What process did you use in determining which questions to ask?

7. What was happening the weeks when you asked no questions or did not follow through with your inquiries?
APPENDIX F

QUESTIONS FOR THE SECOND INTERVIEW
Appendix F

Questions for the Second Interview

1. At this point, what do you consider reflection to be? What do you think the process is and how do you think it helps you to learn, if it indeed does?

2. How have your ideas about reflection changed over the course of these two semesters?

3. You were asked to ask questions that would direct your practice. How did you go about the process of developing questions?

4. What are your feelings about the online clinical post-conference as a learning tool as compared to the face-to-face clinical post-conference?

5. Is there anything else you would like to say about reflection, inquiry, or the online clinical post-conference?
Appendix G

Class Handouts (Information Given to Students in Class)

How to Engage in Reflection

Components of Reflection

I. Experiences
   A. Behavior
   B. Ideas
   C. Feelings

II. Reflective Processes
   A. Returning to experience
      1. Think about experience as it actually happened
      2. Include your reactions and feelings
      3. Pay close attention to detail
      4. Avoid making judgments
   B. Attending to feelings
      1. Utilizing positive feelings
         a. Focus on what was good about the experience, what you did that was good, creative, or stimulating
         b. Believe in yourself
      2. Removing obstructive feelings
         a. Relate feelings to someone
         b. Laugh through story of embarrassing incident
         c. Write about your emotions
   C. Re-evaluating experience
      1. Association—relate new information to what is already known
      2. Integration—look for relationships among the data
      3. Validation—determine the genuineness of resulting ideas and feelings
      4. Appropriation—internalize the new knowledge

III. Outcomes / Analysis
   A. New perspectives on experience
   B. Change in behavior
      1. Greater confidence
      2. Changed set of priorities
   C. Readiness for application
   D. Commitment to action

## Stages of the Reflective Process

<table>
<thead>
<tr>
<th>Elements of the Reflective Process</th>
<th>Criteria</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stage 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Returning to experience</td>
<td>A recollection of events. Replaying the experience. A recounting the features of the experience.</td>
<td>Detail is important here</td>
</tr>
<tr>
<td><strong>Stage 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Attending to feelings</td>
<td>Utilizing positive feelings Removing obstructing feelings</td>
<td>Focus on positive feelings about the experience. Remove impediments related to experience</td>
</tr>
<tr>
<td><strong>Stage 3 Re-evaluate the experience</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Association</td>
<td>Linking of new data (knowledge, feelings and attitude) with what is already known (prior knowledge, feelings, or attitudes).</td>
<td>Relating the old and the new. Making way for the new</td>
</tr>
<tr>
<td>4. Integration</td>
<td>Seeking relationships between prior knowledge, feelings or attitudes with new knowledge, feelings or attitudes. Arriving at insights</td>
<td>Relating the old and the new. Synthesis. Emerging originality.</td>
</tr>
<tr>
<td>5. Validation</td>
<td>Testing for internal consistency between new appreciations and prior knowledge or beliefs. Authenticity of new ideas and feelings.</td>
<td>Applying a “reality test”. Try out new perception in new situations.</td>
</tr>
<tr>
<td>6. Appropriation</td>
<td>Making knowledge, one’s own new knowledge, feelings, or attitudes. Entering into a new sense of identity. The new knowledge, feelings, or attitudes becoming a significant force in own life.</td>
<td>New knowledge becomes part of value system</td>
</tr>
<tr>
<td>7. Outcome of Reflection</td>
<td>Transformation in perspectives, change in behavior readiness, or application commitment to action</td>
<td>New ways of doing something, clarification of an issue, development of a skill, or resolution of a problem</td>
</tr>
</tbody>
</table>

### Phases of the Practical Inquiry Model

<table>
<thead>
<tr>
<th>Phase</th>
<th>Criteria</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. State of dissonance</td>
<td>Feeling of unease that is produced by some triggering event in the experience of the participant that produces a dilemma</td>
<td>Something “bothers” the person. Something is not quite right. Asking the right question</td>
</tr>
<tr>
<td>2. Exploration</td>
<td>Search for information, knowledge or alternatives that might be helpful to them in solving their dilemma</td>
<td>Determining where to go to find required information. Seeking information from various sources.</td>
</tr>
<tr>
<td>3. Integration</td>
<td>Attempt to look for insights and to integrate knowledge and information they gained into a coherent thought or view.</td>
<td>Determining how the new-found information relates to previously acquired knowledge.</td>
</tr>
<tr>
<td>4. Resolution</td>
<td>The resolution of the issue and solution to the problem</td>
<td>Answer obtained. Information stored for later use.</td>
</tr>
</tbody>
</table>

REFERENCES
REFERENCES


*Qualitative research in practice* (pp. 3-17). San Francisco, CA: Jossey Bass.


*American Journal of Nursing*, 82, 823-825.


http://www.nln.org/aboutnln/PositionSTatements/innovation082203.pdf


