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Faculty Perceptions of their Responsibility to Teach Critical Thinking Skills to Nursing Students

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FACULTY PERCEPTIONS OF THEIR RESPONSIBILITY TO TEACH CRITICAL THINKING SKILLS TO NURSING STUDENTS

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FACULTY PERCEPTIONS OF THEIR RESPONSIBILITY TO TEACH CRITICAL THINKING SKILLS TO NURSING STUDENTS

DISSERTATION

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ABSTRACT

FACULTY PERCEPTIONS OF THEIR RESPONSIBILITY TO TEACH CRITICAL THINKING SKILLS TO NURSING STUDENTS

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Barry University, 2007

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Purpose: The purpose of this research study was to ascertain associate degree full-time nursing program faculty members' opinions and beliefs regarding their responsibility to teach critical thinking skills to nursing students. Understanding faculty beliefs about critical thinking will provide nursing program directors with insight into faculty teaching abilities and needed areas of focus for faculty professional development.

Method: This phenomenological qualitative study was conducted with eight purposively selected, full-time, associate degree nursing program faculty who provided their insights, perceptions, and beliefs using a twelve query, online open-ended questionnaire located on a secure researcher website. Participants described and explained, from their perspectives, their definitions of critical thinking, their exposure to critical thinking, their ability to teach critical thinking skills, and their method of assessing the critical thinking skills of nursing students.

Data was analyzed using the Responsive Interviewing Model designed by Rubin and Rubin (2005). Using an inductive process based on the descriptions provided by participants, concepts were outlined and five themes emerged: Participants' descriptions of critical thinking were synonymous with problem-solving; faculty were either confident or anxious regarding their strategies for teaching critical thinking; participants described the clinical setting more frequently than the classroom as the best scenario for assessing critical thinking skills; participants agreed that critical thinking is a must for nursing education; and, participants agreed that faculty preparation and techniques must be improved to promote critical thinking within a nursing program.

Major Findings: Associate degree, full-time, nursing program faculty members fully acknowledged the need for critical thinking throughout the nursing education experience. Participants believed that critical thinking influences a nurse's ability to make clinical decisions which, in turn, influences delivery of safe patient care. Although nursing program faculty members believed that critical thinking is important, they are puzzled when it comes to teaching critical thinking skills to students. Results of this study indicated the urgent need for nursing program administrators to provide faculty with support and training that will enhance their ability to not only teach critical thinking skills, but also develop basic pedagogical proficiency. Training should include the program's definition for critical thinking, an explanation of how the definition corresponds with nursing program curriculum, and pedagogical techniques.

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CHAPTER I

THE PROBLEM

Introduction

When communicating about the application of critical thinking in higher education, Linda Elder (personal communication, July 26, 2006) responded, "What good is education if it does not impact the way we think and live?" Critical thinking is not a new concept in education; in fact, its foundation originated in ancient Greece through the teachings of Socrates, Plato and Aristotle (Paul, Elder, & Bartell, 1997; Sharpes, 2002). John Dewey initiated the critical thinking crusade that fortified education throughout the 20th and into the 21st centuries. Dewey believed that education was not intended to share information by covering content; instead, education should be designed to develop essential techniques for thinking and reflection (Audi, 2001; Boris & Hall, 2005).

Many theorists agree with Dewey's views regarding the intent of education to teach students to think critically (Nosich, 2005; Paul, 2005; Paul & Elder, 2006; Yuretich, 2004). However, there is a deficit in higher education's ability to produce critical thinkers (Paul, 1995). The importance of critical thinking has been highlighted by accrediting agencies, colleges and universities, and faculty; however, the practice of *actually* teaching students to think critically has yet to reach the college classroom on a consistent and comprehensive basis (McMahon, 2005). In other words, most faculty acknowledge that helping students gain critical thinking skills is an imperative for higher education; yet, very few teach their courses in a manner that fosters such development (Bok, 2005; Paul, 2005).

Statement of the Problem

It is clear that college faculty members view critical thinking as an educational concept that fulfills an important role in student learning because it serves as the foundation for lifelong learning (Banning, 2006; Bissell & Lemons, 2006; Elder, personal communication, July 25, 2006; Haix & Reybold, 2005; Pithers & Soden, 2000). Faculty also agree that critical thinking should be included within every college curriculum (Bissell & Lemons, 2001). However, full realization is thwarted because faculty continue to teach students the way they themselves were taught (Clark & Gabert, 2004; Paul, 2006; Simpson & Courtney, 2002), which is through rote memorization of facts and details – an approach that is not conducive to fostering critical thinking skills (Paul).

Society, the labor force, and industry continue to indicate that college graduates lack critical thinking skills (Larson, Osterweis, & Rubin, 1994; McCrink, 1998). This is especially true for many health occupations and particularly nursing. Critical thinking for nurses includes patient assessment, patient evaluation, and clinical reasoning. Hospitals, nursing homes and other healthcare facilities greatly depend on the ability of nurses to use critical thinking and judgment skills when assessing patients. The lack of nurses' proficiency in these areas often increases the risk of delivering unsafe patient care and creating medical errors (Banning, 2006; Del Bueno & Hott, 2001; McCarty & Blumenthal, 2006; Simpson & Courtney, 2002). Teaching students how to think critically in nursing education programs influences lifelong learning, addresses workforce development needs (Paul, personal communication, July 28, 2006), and equips nurse graduates with skills necessary for delivering safe patient care (Banning, 2006; Keil, 2004; Simpson & Courtney).

The problem is that although they acknowledge that teaching critical thinking skills is significant to developing competent nurses, faculty continue to teach content through rote memorization.

Purpose of the Study and Research Questions

The purpose of this research study was to explore and gain a better understanding of faculty beliefs and opinions regarding their responsibility to teach critical thinking skills to nursing students. There are four research questions that address this research topic:

1. How do nursing program faculty in two-year nursing programs define critical thinking within the classroom?
2. How does the definition of critical thinking influence the techniques nursing program faculty use to teach critical thinking skills in the classroom?
3. How well are community college nursing program faculty prepared to teach adult learners critical thinking skills?
4. How is critical thinking assessed in the classroom by two-year nursing program faculty?

To address these questions, eight nursing program faculty were asked to answer an online open-ended questionnaire. The faculty were purposively selected from a two-year (associate degree) nursing program at a four-year college in central Florida.

Although the program is located at a four-year institution, it matriculates students and operates exactly as a nursing program to be found at a community college. The four-year college where the nursing program is offered was formerly a community college, and is Florida's first community college to obtain legislative approval to confer four-year degrees. The institution resembles what Lorenzo (as cited in Floyd, Skolnik, & Walker,

2005) termed “the hybrid model” (p. 82). The hybrid model is defined as a community college that integrates “the best of both worlds” (p. 82) by offering baccalaureate degrees through university partnerships and conferring associate and bachelor degrees in critical workforce areas (Lorenzo, as cited in Floyd, Skolnik, & Walker). University partnerships are the collaborative agreements between community colleges and other four-year colleges or universities which focus on the delivery of baccalaureate, masters and doctoral degrees to local residents at one centralized community college location. The college for this study continues to report to and follow the state guidelines of the community college funding system and strategic planning objectives, and enrolls freshmen and sophomore level students in a two-year nursing program. As a hybrid institution that confers two-year and four-year degrees, the institution, for the purpose of this study, is referred to as a community college.

Background and Significance of the Study

The contemporary healthcare labor force, such as hospitals, healthcare facilities, nursing homes and home healthcare employers, criticize nursing education because nurse graduates continue to lack critical thinking, clinical judgment, and reasoning skills (Kearns & Doyle, 1988). Larson, Osterweis, and Rubin, in their book, *Health Workforce Issues for the 21st Century* (1994), defined this workforce constituency as the individuals “who will meet the present and future health care needs of American society; the people who will make life-saving and cost-saving research discoveries, and the people who will educate them” (p. 2). Many faculty, including nurse educators, teach students the way they themselves were taught, which is by lecture, rote memorization, and restating the text (Clark & Gabert, 2004; Courtney & Simpson, 2002; Paul, 2006). Although several

educators focus on teaching content by way of lecture (Bok, 2006; Haas & Keeley, 1998; Haix & Reybold, 2005; McClenney & Peterson, 2006; Paul, 2006, personal communication, July 27, 2006), many faculty assess students critical thinking ability by using multiple choice questioning (Ennis, 1993).

Higher education, the National League for Nursing, workforce development, and faculty realize the importance of healthcare practitioners' ability to think critically (Del Bueno, 2005; Lowenstein & Bradshaw, 2001; McMahon, 2005; NLN, 2005; Tabak, Adi, & Eherenfeld, 2003). Although there are several studies focusing on critical thinking (Brown & Keeley, 2001; Halpern, 2002; Yeh, 2002) and nursing program faculty (Banning, 2006; Haix & Reybold, 2005; Simpson & Courtney, 2002), there is a scarcity of studies regarding associate degree nursing program faculty beliefs about teaching students critical thinking skills (Haix & Reybold, 2005). Therefore, the purpose of this study was to explore the perceptions and beliefs of associate degree faculty regarding their responsibility to teach critical thinking skills to nursing students.

Exploring faculty perceptions and beliefs regarding their responsibility to teach nursing students critical thinking skills is significant because of the potential large-scale impact on four areas: nursing program students, program directors of two-year nursing programs, workforce development, and patients.

Learning to think critically will greatly benefit nursing program students by improving their skills in processing information, asking questions, and exploring situations (Tabak, Adi, & Eherenfeld, 2003)–competencies which contribute to making sound judgments and good decisions in the delivery of accurate patient care (Frye, Alfred & Campbell, 1999). Thus, the exploration of faculty beliefs is important because student

knowledge and skills acquisition is greatly impacted by the teacher's perceived responsibility to teach content and its application. Gains in critical thinking skills will enhance students' proficiency in patient assessment and overall care (Banning, 2006; Frey, Alfred & Campbell, 1999; Tabak, Adi, & Eherenfeld, 2003). In order for nursing faculty who hold graduate degrees to meet the needs of hospitals and clinical agencies, program directors must understand the issues and provide the appropriate professional development training that will improve teaching effectiveness.

Professional development and continuing education programs are designed to provide healthcare employees with updated training on the most current techniques for continued proficiency (Shapiro, 2005). When a nurse does not maintain current healthcare skills, patients are at risk of being erroneously assessed and treated.

Patients trust that nurses are qualified to adequately assess their health and accurately select and apply the best treatments. Patients will benefit by receiving appropriate healthcare from competent nurses who are skilled thinkers and good practitioners (Banning, 2006). Nurses who practice good thinking skills review all data available including information from the patient. Patient communication is instrumental in determining the appropriate patient care because patients are typically the best source of data regarding their condition (Lunney, 2003). Nurses must listen carefully to patient descriptions of how they feel to validate their analysis of the type of healthcare needed (Lunney). Nurses, who demonstrate good listening and critical thinking skills, reduce the risk of making an inaccurate assessment of patient care needs (Lunney).

Origins of the Researcher's Interest in the Topic

The researcher was an administrator at a college located in central Florida that offers ten associate and four baccalaureate degrees in the healthcare field. The associate degrees offered at this site include Dental Hygiene, Emergency Medical Services, Radiography, Physical Therapist Assistant, Medical Lab Technician, Veterinary Technology, Health Information Management, Respiratory Care, Human Services, and Nursing. The largest program at this site is the Nursing Program. In the role of associate provost, which is similar to dean of students, the researcher worked closely with students and faculty regarding concerns and issues pertaining to student success. The researcher was also a member of each health program's advisory committee.

The advisory committee included individuals from various hospitals, health facilities, and other community constituencies. The purpose of the advisory committee was to allow the program director, faculty, and community to review the progress of students and the health program, and identify areas that need improvement. Frequently, when discussing how nursing graduates are managing as new nurses, advisory committee members have commented that they are deficient in critical thinking, clinical judgment and self-confidence when making decisions about patient care.

From advisory committee meeting discussions, the researcher realized that there was an apparent disconnect between the nurse education offered by the institution and the needs of the workforce. Larson, Osterweis, and Rubin (1994) explained that most gaps between healthcare education and the needs of the workforce occur as a result of the program's curriculum. Although the curriculum is often guided by the workforce and reflects educational topics needed for graduates to be successful on the job, the ability for

educators to keep up with numerous changes in the field is not easy. Larson, Osterweis, and Rubin expressed the need for health programs to design interactive and active student learning experiences to help improve student problem resolution. Apparently, nursing education programs are still limited when it comes to offering instruction that creates the critically thinking graduate. As a result, the disconnect between education and workforce piqued the researcher's interest in learning about critical thinking and its role in nursing education and professional practice.

Theoretical Framework

The theoretical framework for this study was critical thinking as defined by the Richard Paul Model. Scriven and Paul (2001) proposed that critical thinking is more than acquiring and retaining knowledge because it relates to how the individual seeks and considers information. Critical thinking is also more than gaining a set of skills because it requires consistent use of cognitive reasoning abilities in applied settings. Therefore, critical thinking is comprised of two attributes: "a set of skills to process and generate information and beliefs; and the habit, based on intellectual commitment, of using those skills to guide behavior" (Scriven & Paul, 2001, p. 2). To develop these attributes, one must follow the process outlined in what has become the Richard Paul Model for Critical Thinking.

This model is made up of three components: elements of reasoning, intellectual standards, and intellectual traits or dispositions. The elements of reasoning consist of key concepts one must consider when thinking. These concepts provide the tools to evaluate thinking. The elements of reasoning include seeking the question or problem; exploring assumptions and points of view; looking at data, information and evidence; considering

alternative views and ideas; checking inferences; and, considering implications and consequences. Intellectual standards are criteria used to evaluate reasoning or thinking. Regular use of intellectual standards to guide reasoning will improve ones' ability to think critically. Intellectual standards encourage individuals to seek clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness in their thinking.

Intellectual traits or dispositions are what the thinker uses to apply the intellectual standards on a regular basis to the elements of reasoning. Intellectual traits or dispositions produce humble thinking and the courage to recognize that bizarre ideas may be reasonably acceptable (Paul & Elder, 2006). To exhibit intellectual traits, individuals must: show empathy by situating themselves in the place of others to understand their perspectives; maintain control of their beliefs while analyzing their thinking to see if a change is warranted; and, be honest by admitting faulty reasoning when necessary. A person who possesses intellectual traits will persevere in his or her search for truth, think reasonably and rationally by being fair-minded in thinking, and treat all viewpoints equally without displaying a vested interest in personal opinions. Paul and Elder (2005) contend that "critical thinkers routinely apply the intellectual standards to the elements of reasoning in order to develop intellectual traits" (p. 59).

The Richard Paul Model for Critical Thinking supports incremental growth in thinking by utilizing a stage theory approach where an individual will progress through each stage according to his or her commitment to developing critical thinking skills (Paul, 2006). The stage theory for critical thinking includes six stages: the unreflective thinker, the challenged thinker, the beginning thinker, the practicing thinker, the advanced thinker, and the master thinker (Elder & Paul, 2006, personal communication). Elder and Paul

provide detailed explanations of each stage, including the defining features, knowledge of thinking, skills in thinking, relevant intellectual traits, and implications for instruction.

Research Design

Most research regarding critical thinking has not shown diversity in design due to its quantitative nature (Tsui, 2002), which lends credence to this qualitative, phenomenological study. The qualitative research approach seeks to understand the essence of phenomena through a general exploratory process utilizing a holistic inductive approach that examines individuals in a natural setting (Donalek & Soldwisch, 2004). The qualitative design is utilized when the researcher is seeking answers pertaining to feelings, emotions and meanings of individuals who are familiar with the phenomenon being studied (Patton, 2002). Qualitative research is less concerned with statistical data. Instead, it focuses on identifying emerging common themes by systematically exploring variations in the human experience.

For the qualitative researcher, the review of the literature is inconsequential to the study since its purpose is to substantiate that the problem exists (Creswell, 2005). When stating the purpose of the study, the qualitative researcher begins with a general purpose in order to avoid being cornered by an inflexible plan. The qualitative research problem is initiated as an investigative question designed to assist the researcher in acquiring an improved understanding of the phenomenon. Qualitative researchers begin by focusing on open-ended questions rather than deductive theoretical questions (Patton, 2002). For the present study, the use of the qualitative research design is justified further by the researcher's interest in seeking to improve knowledge and understanding of the subject of faculty opinions and perceptions regarding critical thinking.

Definition of Terms

Qualitative research design is an inductive and emerging study that may not yield an exhaustive list of definitions of terms during the proposal phase; however, the list tends to expand after the data collection phase (Creswell, 2003). The following is a list of definition of terms:

Adjunct Faculty–qualified instructional faculty (non-supplemental) hired on a temporary basis.

Case Studies–patient scenarios provided by instructors to help students decide what actions to take in real life situations.

Clinicals–hands-on training where nursing students practice classroom information learned at a medical facility while working with real patients. Clinicals provide a link between content learned and what really happens in the nursing profession.

Critical Thinking–a distinctive process that utilizes organized methods to consistently develop one's own thinking by constantly assessing and improving the way one thinks. This process includes interrelated components of critical thinking known as the elements, standards, and intellectual traits. This process require thinkers to utilize "appropriate evaluative standards in an attempt to determine the true worth, merit or value of something" (Paul & Elder, 2006, p. xx). Through practice, this process will improve thinking and result in the development of intellectual traits.

Faculty Development Programs–teaching and skills enhancement training and activities designed to support faculty in developing proficiency in effectively educating adult learners (Murray, 2002).

Full-time Faculty–for this study, these are faculty members considered as instructional or teaching staff who teach a minimum of 30 equated credit hours per academic year.

Healthcare Provider–an individual who provides medical services to injured and sick people within a hospital, medical clinic or facility, nursing home, doctor's office, etc.

Healthcare Workforce–nurses who fulfill the health care needs of society, make research discoveries, and educate personnel (Larson, Osterweis, & Rubin, 1994) to work in various settings such as hospitals, nursing homes, home healthcare agencies, doctor's offices, and healthcare clinics or facilities.

*Learner-centered Instructio*n–instruction that focuses on learning as the fundamental goal of education where the learner is actively involved in the learning process (Huba & Freed, 2000; O'Banion, 1997; Weimer, 2002).

Nursing Education–educational training provided in two-year programs designed to prepare adult learners to become registered nurses.

Nursing Process –techniques used by nurses to assess, plan, implement, and evaluate patient information when providing managed care.

Problem-Solving Technique –methodical steps employed to address an adverse situation that has been identified.

Reasoning–a mental process used to scrutinize thinking and make good decisions by considering facts, evidence, or the opinions of others while maintaining an awareness of one's own emotions and feelings, evidence, and perceptions (Alfaro-LeFevre, 1999; Paul & Elder, 2006).

Socratic Questioning–the style of questioning that seeks to investigate the implications, justifications, or rationale for taking a position regarding a situation or issue (Paul, Elder, & Bartell, 1997).

Supplemental Instruction–academic reviews provided by faculty to help students understand content and skill information taught.

Teacher-centered Instruction–instruction that focuses on teacher lectures covering course content where the participant is an uninvolved spectator in the learning process (O'Banion, 1997).

Unit Tests–exams administered to nursing students to assess their understanding of content taught.

Limitations and Delimitations

Study limitations summarize the weakness of the research methodology related to the data collection and analysis process and identify factors which further restrict the scope of a project (Creswell, 2003). The following were limitations of this study:

1. Participants included faculty from one institution in west-central Florida, which places a limitation on how well the study represents faculty in similar programs and institutions across other regions.
2. As a result of participants' familiarity with the researcher, participant responses might be in accordance with what they believed the researcher viewed as correct.

Delimitations demonstrate topics that further define and constrict the scope of the study (Creswell, 2003). Delimitations also explain what will not be performed or included in the research and why. Delimitations of this study included:

1. Faculty who teach within the nursing program at one institution in central Florida were questioned using an online, open-ended, confidential questionnaire. The study excluded faculty from other health programs at this institution.
2. The study was conducted using only one paradigm and design; therefore, the phenomenological qualitative design was used exclusively in this study and the study is deficient of any quantitative data.
3. Since much of the literature regarding faculty teaching critical thinking within the classroom does not focus on gender and race, these demographic categories were not considered. According to Elder (personal communication, August 28, 2006) there are no known studies regarding gender and race and critical thinking.

Organization of the Study

The organization of this study consists of five chapters which include figures and references, and appendices. Chapter one consists of the introduction and provides details regarding pertinent issues about the study, the statement of the problem, purpose of the study, research questions, background and significance of the study, origins of the researcher's interest in the topic, the theoretical framework, research design, definition of terms, limitations and delimitations, organization of the study, and a chapter summary. Chapter two provides a literature review and includes an analysis of pertinent studies regarding the research. Chapter three details the organization and administration of the research methodology, philosophical framework, rationale for a qualitative study, rationale for a phenomenological study, research questions, methodology, quality and verification, ethical considerations, and chapter summary. Chapter four vividly describes the results of the study by providing the reader with rich, thick descriptions of the phenomenon revealed

by participants. Chapter five summarizes the parameters of the study, discusses results and findings, and offers recommendations for further research.

Chapter Summary

This chapter discussed the need for critical thinking in higher education, especially nurse education. The statement of the problem is that nursing graduates continue to lack the ability to think critically, which suggests that a gap exists between the material taught in nurse education programs and employer expectations and needs. The purpose of the study was to gain a better understanding of how nursing program faculty perceive their responsibility to teach students critical thinking skills. This study is significant since it will guide topics for future faculty development workshops designed to improve faculty skills in teaching nursing students to think critically. Teaching nursing students critical thinking skills will lessen the performance gap between workforce expectations and graduate competency.

The researcher was interested in this topic because she is an administrator at a college campus where closing the critical thinking gap between workforce needs and its nursing program education is greatly needed. The theoretical framework that guided this study was the Richard Paul Model of Critical Thinking, which proposes that critical thinking is a process where individuals assess, evaluate, and analyze their own thinking to improve thinking and make the best decisions. This qualitative phenomenological study investigated the lived experiences of eight full-time, community-college nursing program faculty. The definition of terms related to critical thinking, education, and nursing as a profession is listed. Limitations and delimitations of this study have been explored and

stated. This chapter concludes by providing the organization of the study which explains the objectives of each chapter, including a summation of chapter one.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Introduction

Critical thinking is an age-old concept that began as early as the Classical Greek period with Socrates and his persistent questioning to attain knowledge (Paul, Elder, & Bartell, 1997). Although defined in various ways, collective explanations of critical thinking include analyzing and evaluating views to make improvements in the quality of life. From generation to generation, critical thinking has continued to play an integral role in society, especially in the secondary and post-secondary educational systems. Sumner (1906) postulated that critical thinking is important in society because:

> The critical habit of thought, if usual in society, will pervade all its mores, because it is a way of taking up the problems of life. Men educated in it cannot be stampeded by stump orators… they are slow to believe. They can hold things as possible or probable in all degrees, without certainty and without pain. They can wait for evidence and weigh evidence, uninfluenced by the emphasis or confidence with which assertions are made on one side or the other. They can resist appeals to their dearest prejudices and all kinds of cajolery. Education in the critical faculty is the only education of which it can be truly said that it makes good citizens (p. 633).

Several theorists concur with Sumner's theory that the ability to maintain an educated society requires its citizens to be taught how to think critically (Nosich, 2006; Paul, 1995; Paul & Elder, 2003). However, the literature indicates that educators are perplexed when it comes to teaching critical thinking in secondary and postsecondary educational settings (McMahon, 2005).

The great debate is whether or not faculty should focus their efforts on "teaching students how to think rather than what to think" (Bruning, Schraw, Norby & Ronning, 2004, p. 180). Complexity in fostering adult learners' critical thinking skills occurs mainly because faculty tend to teach in the manner in which they themselves were taught. Specifically, they were not exposed to instructional methods that enhanced critical thinking and they do not have a good understanding of it as a concept (Courtney & Simpson, 2003; Paul, as cited in McMahon, 2005). For these reasons, faculty prefer to teach content rather than critical thinking (Bok, 2006; Paul & Elder, 2005).

Faculty prefer to teach content because the structure of the classroom curriculum relies largely on student learning outcomes, which typically are not congruent with critical thinking pedagogy (Paul, 1995). Paul (as cited in McMahon, 2005) further supported this notion when he posited that the traditional teaching technique occurs by way of didactic lectures. Very few faculty understand the learning strategies necessary to facilitate students' ability to think critically and what it means to teach content that perpetuates critical thinking.

The climate of the workforce has been a driving force in curriculum development, which significantly impacts teaching strategies and techniques. The Florida Department of Education (2005) defines *workforc*e as individuals who work within society. America's employment skills must be developed for economic growth and global competitiveness, which can be achieved when individuals who work within a specific trade or profession are successful (Harrison & Weiss, 1998). Employers fervently emphasize the importance of employees demonstrating the ability to think critically. This is especially true for the social

services professions and healthcare, specifically nursing (Larson, Osterweis & Ruben, 1994).

An emphasis on critical thinking in nursing has been highlighted due to the constantly changing healthcare environment and the need for nurses to be able to cope with a professional role that is complex (Simpson & Courtney, 2002). Nurses are challenged with delivering safe patient care, which will occur only if they are capable of accurately assessing the patient's situation in order to provide a proper patient care. Lowenstein and Bradshaw (2001) postulated that nurses must think critically to provide safe patient care. As a result, nursing education programs are called into question regarding the program curriculum and teaching strategies. The National League of Nursing (NLN), a national nursing profession accreditation body, mandated that nurse education programs include critical thinking in the curriculum (Simpson & Courtney) for the purpose of enhancing the ability of nurse graduates to constructively critique and evaluate new knowledge and employ analytical skills in their work (Boychuk-Duchsher, 1999).

The purpose of this literature review was to describe in detail the concept of critical thinking, the impact of critical thinking on education, and the importance of critical thinking in the nursing profession. The review also sought to establish the need to attain a greater understanding regarding the perceptions of community college faculty about their role in teaching critical thinking skills to nursing students. Understanding how community college nursing faculty view their responsibility to teach students critical thinking skills will greatly impact the course of action needed for the profession to achieve its goal of providing safe patient care. The knowledge gained from learning more about faculty perceptions regarding their responsibility to teach critical thinking skills to nursing students

will also greatly assist college administrators in providing training programs designed to enhance faculty development and student learning.

The Concept of Critical Thinking

The ability of individuals to think critically and independently has permeated areas such as national government, workforce, and education (Pithers & Soden, 2000). The concept of critical thinking has finally been included in course descriptions, textbooks, and college mission statements. Unfortunately, critical thinking as a concept has not been successfully taught within college classrooms (Burbach, Matkin, & Fritz, 2004; McMahon, 2003). The literature suggests that not all students are good thinkers, and not all teachers teach students how to think critically (Pithers & Soden). In most cases, the lack of well-developed critical thinking skills is the result of an incomplete or misconstrued understanding of what they are (Paul, 2006). This section of the chapter will provide an historical perspective of critical thinking, a discussion of the attempt to define it, and a review of a model that explains the process.

The History of Critical Thinking

Using dialogue or dialectic, Socrates formulated a questioning process designed for individuals to use in search of moral character (Sharpes, 2002). Dialectic is the Socratic Method for illuminating truth through argument. The Socratic Method is essentially a technique where discussants dialogue about the inference of a statement—its legitimacy or fallacy—until they realize new knowledge. Socrates set the stage for a tradition of critical thinking by thoughtfully questioning common beliefs and explanations, and circumspectly differentiating beliefs that are realistic and rational from those that lack adequate evidence or a reasonable basis to justify our confidence (Paul, Elder, & Bartell, 1997).

Socrates did not win popularity contests for his persistent questioning and condemnation of flawed thinking. Blake, Smeyers, Smith, and Standish (2003) and Paul, Elder, and Bartell (1997) proposed that Socrates' most important contribution resulting from dialogue was the notion of individuals seeking pure knowledge that reaches beyond human accomplishments, an attainment that is unimaginable and supernatural. For this reason, the most intrusive abstract thinking would still include a personal point of view which provides an opportunity for argument and divergent perceptions.

The early dialogues of Plato describe Socrates' stance on abstract thinking (Paul, Elder, & Bartell, 1997; Sharpes, 2002). Plato was an idealist who claimed that knowledge of the higher good can only be found by way of dialectic, a process he learned from his teacher, Socrates. Dialectic is where one constantly questions assumptions to discern what is true from what is false, which causes one to further examine ideas and develop new ones (Sharpes).

Plato, Aristotle, and other Greek skeptics followed Socrates' techniques for fostering critical thinking. These philosophers placed an emphasis on independent thoughts which are considered to be surface thinking. They also supported the notion that only the trained mind can immerse itself beneath the surface to consider profound realities of life. Paul, Elder, and Bartell (1997) further purported that "from this ancient Greek tradition emerged the need, for anyone who aspired to understand the deeper realities, to think systematically, to trace implications broadly and deeply, for only thinking that is comprehensive, well-reasoned, and responsive to objections can take us beyond the surface" (p. 1).

The Middle Ages brought the birth of the university, which further symbolizes the notion of preserving intellectual traditions (Sharpes, 2002). Thomas Aquinas was one of the great intellectuals during this era (Sharpes), and is known for enhancing the understanding of the power of reasoning (Paul, Elder, & Bartell, 1997) and questioning as a justifiable means for discerning the truth. According to Aquinas, critical thinkers reject beliefs that lack rational fundamentals of truth (Sharpes).

The Renaissance brought about chaos as religion and politics began to greatly influence education (Sharpes, 2002). Paul, Elder, and Bartell (1997) explicated that during the Renaissance "scholars began to think critically about religion, art, society, human nature, law and freedom" (p. 2). Francis Bacon was concerned about how we misuse our minds in seeking knowledge. Bacon's argument opposed the common practice of deductive reasoning and led him to introduce a new means for attaining knowledge called inductive reasoning. Inductive reasoning is a method of learning through experiences, observations, and conducting tests (Sharpes). His book, *Advancement of Learning*, is considered one of the earliest manuscripts in critical thinking (Paul, Elder, & Bartell). There are several other philosophical thinkers during the Renaissance period who impacted critical thinking: Descartes, More, and Machiavelli. Their influence was significant because their leadership provided the opportunity for science, democracy, civil liberties, and independence of thought to emerge and develop (Paul, Elder, & Bartell).

The French Enlightenment was the age of reason that sought and established scholarly customs of knowledge and research (Sharpes, 2002). Major themes from the Enlightenment period are: increased secular thinking; empiricism in scientific investigation; the use of reason in thought, replacing blind faith; the idea that progress in

human development is inevitable; and a distrust of tradition and religion. Enlightenment philosophers supported the idea that all authority must submit, somehow, to the inquiry of rational critical questioning (Paul, Elder, & Bartell, 1997).

The twentieth and twenty-first centuries brought about a heightened understanding of the nature and power of critical thinking. Philosophers such as Dewey, Wittengstein, and Piaget provided concepts of critical thinking designed to improve our understanding of the foundation of human thinking and the need to question ideas and evaluate the power and restrictions of those ideas (Lipman, 2003; Paul, Elder, & Bartell, 1997). These concepts included: the importance of critical thinking; analyzing ideas and the power of those ideas; and, understanding the tendencies of human thought, multiple viewpoints, and the power of information and fact-finding efforts. The deep need for critical thinking became more apparent for life and in education (Paul, Elder, & Bartell). Critical thinking is the outcome of the history of inquiry and reflection which includes hundreds of philosophers who contributed to its development and meaning.

Critical Thinking Defined

Current educational theory regarding reasoning and critical thinking began with John Dewey (Boris & Hall, 2005). Dewey strongly believed that the purpose of education was to develop essential methods of critical or reflective thought. Reflective thought, according to Dewey, is defined as knowledge gained through vigorous, yet careful, consideration of one's beliefs and the understandings used to support it (Boris & Hall, 2005). Dewey believed that the development of reflective thinking skills adequately prepared individuals to strategize and assess situations and make good decisions (Audi, 2001). He noted that "just because we cannot tell a person how to think does not mean we

cannot explain the various methods one uses to think. We can also describe the features of these methods" (Audi, 2001, p. 3). Although some approaches are better than others, the individual is more effective and productive if reflective thinking, or what is now called critical thinking, occurs.

Critical thinking is understood in numerous ways which makes it more difficult to define. Catalano (2000) purported that most ideas that are difficult to define have several interpretations that are likely to overlap in meaning. As a concept, there is a general lack of consensus in the literature regarding the definition of critical thinking. As indicated in the research findings and policy recommendations of the *California Teacher Preparation for Instruction in Critical Thinking* study by Paul, Elder and Bartell (1997), many authors provided various definitions for critical thinking. Ennis (1985) defined critical thinking as reflective thinking that is influenced by what we believe we should do. Erwin (1997) argued that critical thinking, in general, is one's ability to recognize central ideas of contention, distinguish key associations, properly utilize information, interpret results using data, evaluate findings, adjust decisions according to evaluation, and solve the problem. Paul and Elder (2006) defined critical thinking as an art that analyzes, evaluates, and enhances thinking.

Some authors consider critical thinking as ambiguous knowledge or ways of knowing (Haix & Reybold, 2005). Garside (as cited in Brown & Freeman, 2000) defined critical thinking as a constrained feeling of doubt. In general, critical thinking is logical and rational thinking (Paul & Elder, 2003) that is practiced and requires control (Paul, 2006; Pithers & Soden, 2000). Yeh (2001) considered argumentation as the definition for critical

thinking. Borg and Borg (2001) defined critical thinking to be the notion of considering values and making choices accordingly.

Various authors (Brookfield, 1987; Jacobs, Ott, Sullivan, Ulrich, & Short, 1997; Paul, 2003) maintained that critical thinking is a process, not a product or outcome. Simpson and Courtney (2002) agreed that critical thinking is a process and not a method to be learned, and further emphasized that critical thinking includes the "cognitive and affective domains of reasoning" (p. 91). These cognitive and affective domains are essential components of Bloom's Taxonomy (Bloom, 1956), a classification system that complements the goals of our educational system. This system places emphasis on education, logic and psychomotor functionality through a categorization of precise terms and incorporation of widely accepted psychological principles. Bloom's taxonomy includes three domains: cognitive, affective and psychomotor.

The cognitive domain is comprised of mental skills that include knowledge and development of intellectual skills and functions such as the recall of specific facts, procedural patterns, and concerns. There are six categories of cognitive domain that must be mastered sequentially: knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom, 1956; Simpson & Courtney, 2002).

The affective domain delineates how we respond to situations emotionally, such as feelings, values, appreciation, enthusiasms, motivations, and attitudes. There are five categories in the affective domain: listening (receiving phenomena), responding to phenomena, valuing the phenomena, organizing or prioritizing of values, and adopting others' beliefs (internalizing values).

The manipulative or psychomotor-skills areas are skills that are measured by speed and precision. There are seven categories in the manipulative or motor-skills domain: perception, set, guided response, mechanism, complex overt response, adaptation, and origination (Bloom, 1956). Bloom's taxonomy greatly lends itself to critical thinking by developing a classification system of the various levels of intellectual behavior in learning (Bloom). This classification system resembles the concept of critical thinking because components of the system require higher order thinking (Bissell & Lemons, 2006).

Regardless of how critical thinking is classified, several definitions, interpretations, expressions, and concepts exist. In an attempt to develop consensus regarding the definition of critical thinking, Facione (1990) was charged with facilitating an initiative sponsored by the American Philosophical Association using the Delphi method. The Delphi method is a process for creating dialogue that promotes participation without contentious behavior in an effort to generate predictions or consensus regarding various issues (Adler & Ziglio, 1996). The Delphi method includes questioning, responses, summary development, and consensus building. The project included a panel of 46 critical thinking experts who collaborated to develop a consensus statement regarding critical thinking and the ideal critical thinker. The project provided a vigorous consensus statement of the concept of critical thinking as an outcome of higher education:

> We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and interference, as well as criteriological, or contextual considerations upon which that judgment is based. CT is essential as a tool of inquiry. As such, CT is a liberating force in education and a powerful resource in one's personal and civic life…While not synonymous with

> good thinking; CT is a pervasive and self-rectifying human phenomenon… (American Philosophical Association, 1990, p. 3).

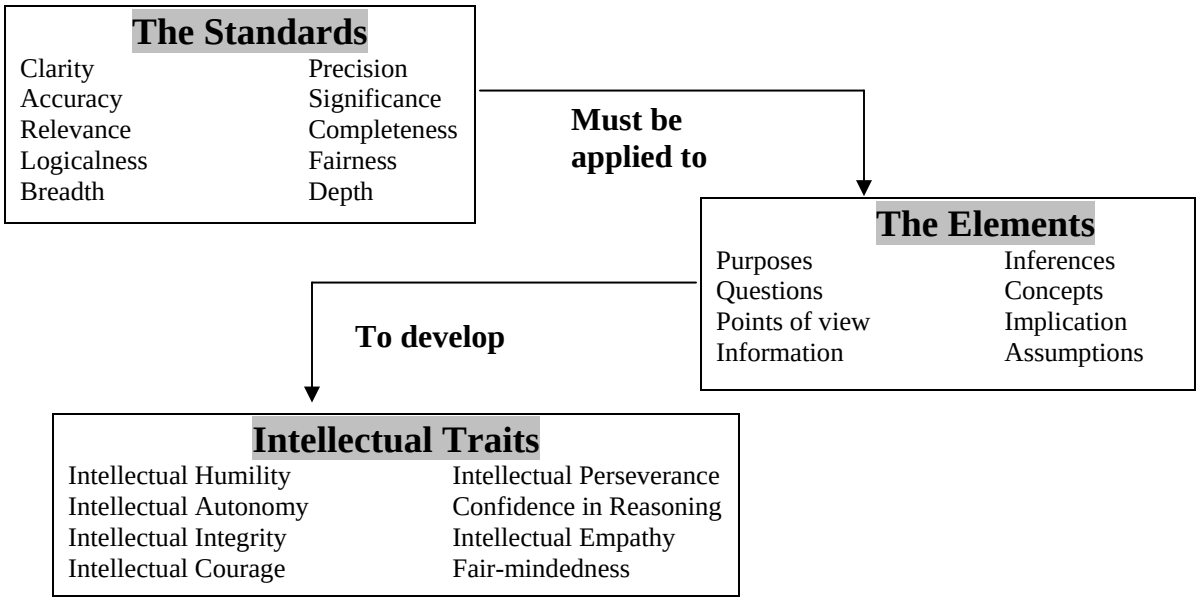
While an attempt was made to establish a widely accepted definition for critical thinking, controversy continues regarding its description, categorization, and applicability across disciplines or specific professions (Gordon, 2000; Stone, Davidson, Evans, & Hansen, 2001; Vito-Thomas, 2000). For this study, the critical thinking definition developed by Michael Scriven and Richard Paul (2001) is most appropriate because it provides a more holistic approach to critical thinking and "elaborates [on] critical thinking abilities in normative terms that can be applied in any domain, set of skills, or knowledge-base while acknowledging the domain-specific features of good thinking within specific disciplines" (Gibson, 2003, p. 33). Scriven and Paul (2001) defined critical thinking as:

> An intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action (p. 1).

Paul and Elder (2006) proposed that critical thinking is autonomous thinking where the thinker is in control of all actions, including identifying good and faulty thinking. As a result, critical thinking requires meticulous standards and techniques for applying the standards. Critical thinking requires effective communication and analytical abilities as well as a commitment to overcome selfish ways of thinking that result from viewing the world from only one perspective. Paul (1995) also considered critical thinking to be a purposeful, unique manner of thought in which individuals systematically and consistently utilize a set of criteria and standards to assess their own thinking, develop knowledge about

their views, and take responsibility for their opinions. Good thinkers continuously evaluate their perspectives to improve reasoning. Paul and various authors (Brookfield, 1987; Jacobs, Ott, Sullivan, Ulrich, & Short, 1997) purported that critical thinking is a process, not a product or outcome. The model for critical thinking developed by Richard Paul clearly explains the process of obtaining good critical thinking skills and utilizing them for lifelong learning. A graphic illustration of this is exhibited in Figure 1.

Figure 1. Richard Paul's Model for Critical Thinking



The first component of Paul's critical thinking model are the elements of thought. According to Paul (1995), the elements of critical thinking are present at all times. "Whenever we think, we think for a purpose within a point of view based on assumptions leading to implications and consequences. We use concepts, ideas and theories to interpret data, facts and experiences in order to answer questions, solve problems, and resolve issues" (Elder & Paul, 2005, p. 55).

The elements of thought are: purpose, question, information, interpretation and inference, concepts, assumptions, implications and consequences, and points of view. Purpose is the goal or objective of the thought. Questioning an issue is the problem at hand or the matter of discussion. Information requires the thinker to consider data, facts, observations and experiences. Interpretation and inference is the act of the thinker developing solutions or conclusions based on evidence. Concepts encourage the thinker to consider theories, laws, principles, and definitions to make decisions. Assumptions are the thinker's beliefs that are imbedded subconsciously. Assumptions carry the thinker's biases and prejudices that greatly impact how decisions are made. Implications and consequences are the pros and cons of what could happen when the thinker makes his or her decision. Once the elements of thought are mastered, the thinker is prepared to apply those elements utilizing the standards of critical thinking (Paul & Elder, 2006).

Critical thinking standards are principles by which reasoning can be judged and imply the quality of one's critical thinking (Paul, 1995). The eight standards of critical thinking are: clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness. Clarity is the notion of one's ability to understand the meaning of what should be grasped. Accuracy provides verification of details and helps the thinker avoid making errors or distorting the truth. Precision is the ability of the thinker to provide the appropriate level of detail regarding thinking. Relevance is ensuring that the thought directly relates to the topic of conversation or the issues at hand. Depth includes intricacies and connected components of the issue. Breadth provides an opposite view of the topic. Logic is the idea of how our thoughts come together and make sense. Significance is the identification of the importance of thinking and its relationship to the issue. Fairness is the

notion of good thinking because an individual who can master the seven standards for critical thinking will also become fair-minded as his or her thinking becomes more balanced and less self-serving. According to Paul (2006), standards demonstrate how well one thinks. Once individuals understand the elements of critical thinking and the standards to employ to analyze their opinions, they will exhibit intellectual traits or dispositions.

Intellectual traits or dispositions of critical thinking are developed by practicing the elements and standards of critical thinking (Paul & Elder, 2005). Developing intellectual traits occurs when the thinker utilizes the elements consciously and applies the standards to examine the quality of critical thinking. The primary goal is for the thinker to acquire intellectual traits and dispositions by way of routinely applying the standards and elements of critical thinking. The intellectual traits or dispositions are: intellectual humility, intellectual courage, intellectual empathy, intellectual integrity and perseverance, confidence in reason, intellectual autonomy, and fair-mindedness.

Intellectual humility is the ability to determine what one knows and does not know. Basically, it determines the thinker's awareness of his or her intellectual limitations and his or her own lack of knowledge (Paul & Elder, 2005). Demonstrating intellectual humility does not signify that the thinker is a coward or subservient, but that the thinker is modest or unassuming regarding beliefs about thinking.

Intellectual courage is the ability to dispute popular ideas and viewpoints. Intellectual courage causes the thinker to examine cherished viewpoints that one would not normally abandon to consider an opposing idea. By practicing intellectual courage, the thinker is able to consider differing ideas and beliefs and possibly find a rationale and justification in favor of the opposing view (Paul & Elder, 2005).

Intellectual empathy calls for the thinker to develop the ability to become involved in opposite viewpoints and the perceptions of others, and cleverly express those views in a discerning manner. Intellectual empathy requires the thinker to put him or herself in another person's situation and sincerely try to understand the reason for his or her point(s) of view. Most thinkers are not predisposed to intellectual empathy because most individuals think from their own viewpoint (Paul, 1995; Paul & Elder, 2005).

Intellectual integrity is the notion of individuals holding themselves to the level of expectations that they require others to meet as they express conflicting thoughts to each other. For example, a thinker practicing intellectual integrity who is in the midst of a discussion would provide the same standard of evidence or facts to defend his or her view as he or she would expect others to provide as they defend their views. A person practicing intellectual integrity would look for intellectual double standards in his or her own thoughts and actions (Paul, 1995; Paul & Elder, 2005).

Intellectual perseverance is the thinker persisting through difficult and frustrating situations without giving up. Paul and Elder (2005) contended that "intellectual perseverance is the disposition to work one's way through intellectual complexities despite the frustrations inherent in the intellectual task" (p. 36). Critical thinkers must be willing to work through various difficulties when dealing with problems in order to develop confidence and intellectual strength.

Confidence in reason is the ability to recognize what good quality reasoning is and what it is not. Confidence in reason is the belief that individual and collective interests are best served by coaching and encouraging people to develop their own conclusions based on good moral and logical reasoning. Paul and Elder (2005) further held that the mind does

not logically use rational principles to decide what to believe or what not to believe; the mind essentially believes or refuses to believe ideas based on egocentric or sociocentric standards which are typically the views of one person or a group of people. Egocentric standards block the ability to think critically because they are used by individuals who view everything in relationship to themselves (Paul, 1995). Sociocentric standards also block an individual's ability to think critically because a sociocentric thinker views his or her social group status as superior and correct (Paul). Critical thinkers should be willing to understand the unreasonable tendencies of people in society and vigorously act to decrease them.

Intellectual autonomy refers to accountability for one's own thinking, viewpoints, and principles. This trait requires that thinkers not conform to the views of their peers or depend on others for direction and control of their decisions. The autonomous thinker is fully responsible for developing his or her own thinking and life direction. Autonomous thinkers seek to identify their thinking and measure it using relevant standards. To ensure accountability, the intellectually autonomous thinker is not afraid of how others may view his or her thinking (Paul, 2006).

Fair-mindedness in thinking occurs when one is able to use the elements of reasoning to analyze various opposing viewpoints, causing the individual to confront the notion of being open-minded in his or her thinking. Individuals who practice fair-minded thinking are aware of the need to treat all viewpoints equally, negating their personal views, feelings or interests (Paul, 1995). Fair-minded individuals are accountable for their personal views which is, according to Richard Paul (personal communication, July 25, 2006), a habit that not many individuals form and use on a consistent basis.

Maintaining accountability for one's own thinking as outlined by philosophers Scriven and Paul (2001) can be accomplished by utilizing a critical thinking process (the Richard Paul Model) which provides a holistic approach to student learning. As Paul and Elder (2005) proposed, intellectual traits can be developed and mastered by routinely applying intellectual standards to the elements of reasoning. This mastery of critical thinking is developed in stages--from the unreflective and challenged thinker to the advanced and ideal thinker. A thorough understanding of how the Richard Paul Model explains critical thinking will contribute to the interpretation of the participants' responses to this study's online, open-ended questionnaire. Therefore, the strengths and weaknesses of the Richard Paul Model, as discovered by other researchers, may be considered important to this present investigation.

The ability to consider the support for or against an idea, situation, or problem is an important aspect of critical thinking. This section provides a brief overview of the strengths and weaknesses of the Richard Paul Model as proposed by two authors.

One of the strengths of the Richard Paul Model is that it is effective in teaching students and faculty critical thinking skills. Reed (1998) conducted a study of the effects of the Richard Paul Model as an instructional tool. Utilizing a simple comparison of student achievement scores in a community college history class, Reed found that there were significant differences between the experimental and control groups. The experimental group was better able to define critical thinking and provided more examples of how students think critically in their daily lives. The study further established that integrating the concepts and processes of critical thinking within a community college course led to a significant increase in students' critical thinking ability.

Gibson (2003) postulated that the Richard Paul Model includes exemplary types of critical thinking that cover a general and discipline-based approach to reasoning. Gibson agreed that the Richard Paul Model "is the most complete, current explanation of how critical thinking should operate across disciplines and within them, and of how it should manifest itself in both academic study and everyday reasoning" (p. 29).

Although the Richard Paul Model can be used in general and across disciplines to accomplish critical thinking and includes philosophical and psychological approaches, there are limitations. One such limitation is that students and faculty must be trained to effectively use the Model (Reed, 1998; Reed & Kromrey, 2001). Without training, students and faculty will find the concept of critical thinking even more difficult to grasp. Critical thinking training using the Richard Paul Model is quite comprehensive and requires great effort. Brookfield (as cited in McMahon, 2005) and Haix and Reybold (2005) noted that students and faculty tend to find the concept of critical thinking challenging to learn.

Gibson (2003) argued that the concepts of critical thinking by professional disciplines are a bit flawed. According to Gibson, the Richard Paul Model works well, in a general sense, for understanding critical thinking. However, for specific disciplines, the model lacks consistency in its applicability to the logic of a profession's line of thinking. Paul and Elder (personal communication, July 24, 2006) argued that the model is applicable across disciplines because experts within professional disciplines contribute to the development of discipline-specific critical thinking manuals that give explanations of thinking patterns. Therefore, the discipline-based literature produced by Paul is developed in collaboration with experts who are familiar with the discipline as well as the discipline's flow of logic.

In summary, the idea of critical thinking has been supported by philosophers and theorists from the classical Greek era to the present twenty-first century. Although there are various definitions for critical thinking and an effort to build a consensus understanding of the concept, critical thinking is still a difficult idea to explain. The lack of a clear definition continues to be problematic for educators. A significant question is Should faculty focus on teaching students to memorize and reiterate information or should they teach students how to think critically and develop and support their own conclusions (Bruning, Schraw, Norby & Ronning, 2004)? Although there are numerous studies supporting the importance of critical thinking in higher education, research indicates that critical thinking continues to be excluded as a common practice in community college pedagogy (McMahon, 2005).

The critical thinking definition by Scriven and Paul (2001) will be used for this study. Scriven and Paul defined critical thinking as a process that is socially constructed and where an individual employs various concepts such as analyzing, evaluating, observing, or reasoning to guide beliefs and actions. The Richard Paul Model is most appropriate for this study because it applies to any professional field or domain, skill-set, or knowledge base, and it provides the most comprehensive account of the critical thinking process. The model considers critical thinking as a process, not a concept learned in class. This process requires thinkers to consistently use standards to measure the elements of reasoning in order to develop the intellectual traits or dispositions that are characteristic of critical thinkers (Paul & Elder, 2005).

While the Richard Paul Model is the most comprehensive model that provides a thorough explanation of the meaning and process of critical thinking, it has several strengths and weaknesses. The researcher is interested in using the strengths and

weaknesses of the Model to better determine the depth and breadth of participants' understanding of the concepts of critical thinking.

Critical Thinking Skills Assessment

Higher education seems to understand the concept of critical thinking; but, ironically, little has been done to improve student skills in this area (Bissell & Lemons, 2001; Ennis, 1993). Although numerous commissions require critical thinking as an outcome, many faculty find themselves without a precise method for evaluating students in this area (Bissell & Lemons). The difficulty in evaluating students' ability to think critically results from the difficulty in providing evidence that critical thinking is understood or achieved. It is easy to measure content learned; however, it is a challenge to measure critical thinking (Facione, 1990; Paul, et al., 1997).

Finding a clear definition of critical thinking is the first step in teaching students to think critically (Bissell & Lemons, 2006). The next step is to assess critical thinking. First, faculty must understand the purpose of assessing critical thinking skills which is not a "one size fits all" procedure (Ennis, 1993). Many faculty fail to appreciate that assessments are useful to ascertain whether a student has a clear understanding of course content (Bissell & Lemons). Ennis proposed various examples of other possible purposes for assessing critical thinking: identifying students' critical thinking levels; providing students with constructive criticism about their critical thinking competence; encouraging students to be critical thinkers; notifying teachers of the results of outcomes assessment regarding their efforts to teach their students to think critically; performing research about the development of critical thinking instructional questions and issues; assisting in the decision of student

acceptance to an educational program; and informing schools of their accountability for student competence in critical thinking.

In assessing critical thinking skills, Ennis (1993) suggested that educators consider possible deceptions regarding the use of certain assessment tools. There are several standardized tests designed to measure one's critical thinking skills (Bissell & Lemons, 2006; Simpson & Courtney, 2002). Ennis highlights a few concerns about probable traps when using these measurements for critical thinking assessment. Potential snares in assessing critical thinking could be the use of a pretest and a posttest administered without comparing the class to a control group. The results are considered questionable when a study does not include a control group since the student was exposed to more than critical thinking instruction which could impact the results. Another deception or trap described by Ennis in assessing critical thinking skills is the use of multiple-choice questions by most comprehensive assessments which causes the assessment to lose its validity in assessing critical thinking. Use of multiple-choice questions to assess critical thinking traps the student response since multiple-choice assessments provide pre-determined answers using a process of elimination, which prevents the use of critical thinking skills.

Ennis (1993) believed educators should ask three important, but often overlooked, questions when considering tools to use to assess critical thinking: (1) Is the test based on verifiable concepts of critical thinking? (2) How comprehensive is its coverage of this concept? And, (3) Does it seem to do a good job at the level of one's students?

Ennis (1993) purported that there are a number of assessments that cover several characteristics of critical thinking. These assessments include the following: California Critical Thinking Skills Test: College Level (CCTI) (Facione, 1990); Cornell Critical

Thinking Test Level X (Ennis & Millman, 1985); Cornell Critical Thinking Test, Level Z (Ennis & Millman, 1985); Ennis-Weir Critical Thinking Essay Test (Ennis & Weir, 1985); Judgment Deductive Logic and Assumption Recognition (Shaffer & Steiger, 1971); and, the Watson-Glaser Critical Thinking Appraisal (Watson & Glaser, 1980).

Paul (personal communication, July 28, 2006) argued that the Watson-Glaser and CCTI inventories measure only components of critical thinking, not the whole concept of critical thinking. As a result, students can perform well on the Watson-Glaser and CCTI inventories and not possess critical thinking skills. Therefore, Paul and Nosich (1991) criticized the use of most instruments designed for national assessments to measure critical thinking. This notion is supported by a study conducted by the Tennessee Technical University in their exploration of methods to assess critical thinking (Barry, Hayes, & Unterstein, 2003). The researchers chose to develop their own instrument to measure critical thinking instead of using the CCTI because they found that the CCTI did not measure the thinking skills applicable to their definition of critical thinking. Nosich (personal communication, July 25, 2006) strongly suggested that a new instrument be developed to adequately assess critical thinking ability. Ennis (1993) proposed that open-ended questions are best for those striving to develop their own critical thinking assessment tools because open-ended questions are more amenable for self-developed tests.

Although most critical thinking assessments are multiple-choice tests (Ennis, 1993), there are viable alternatives to using multiple-choice tests to assess critical thinking skills, such as essay questions with variations in the degree of difficulty and level of performance. Hummer (1997) proposed the use of a capstone paper as the assessment for critical thinking. Capstone papers validate true critical thinking achievement because they require

the reader to support his or her stance or validate a concept. Assessing with tests that are not multiple-choice is a more expensive process and requires more time to analyze (Ennis; Hummer). Paul (personal communication, July 28, 2006) proposed interviewing as a good method to assess critical thinking skills.

Regardless of the method for assessment, critical thinking is an important outcome for every academic discipline (Hummer, 1997). This is especially true for the nursing profession because the nursing process of assessing patients and delivering safe patient care is supported significantly by critical thinking (Bandman & Bandman, 1988; Lowenstein & Bradshaw, 2001).

Community College Pedagogy

America is well-known for its promises of opportunity and fair treatment for all. Kay McClenney (as cited in Boswell & Wilson, 2004) argued, “This is the land where a person born in humble circumstances, if she is willing to work hard, can rise to the highest level, can grow wealthy and secure, can contribute, can become President” (p. 27). While America asserts the notion of granting opportunity to everyone, higher education is increasingly assuming responsibility for everyone achieving their dreams and life goals (McClenney, as cited in Boswell & Wilson, 2004). This is especially true for community colleges, which were established as democratic organizations and catalysts for access and opportunity. Because access and opportunity are predominant in the mission of the community college (Phillippe & Patton, 2000), many early educators were skeptical about the community college’s ability to survive because of the variety of its student population. Over time, community colleges have become the pillar of their districts, supporting the

employment industry by providing educational opportunity to all who enroll (Phillippe & Patton).

The History of the Community College

Referred to initially as a junior college, the first community college began in 1901 in Joliet, Illinois, when the township authorized a high school to provide postgraduate education (Phillippe & Sullivan, 2005; Vaughan, 2000). In 1917, the postgraduate division separated from the high school and formed one of the nation's first junior colleges, Joliet Junior College. Joliet Junior College was successful and addressed the needs of the community by providing post-secondary education to GI's, women and other minority groups. The school used tax dollars to offer the community postsecondary education, and courses transferred to prestigious institutions such as the University of Chicago and Northern State University. Junior colleges were developed to serve as a bridge between high school and university education (Phelan, 2000), and expanded to provide career/vocational education, continuing education, employee training, and community service (Vaughan). During the 1920s, the American Association of Junior Colleges was established and was later renamed the American Association of Community and Junior Colleges (Phillippe & Sullivan). The association is now known as the American Association of Community Colleges (AACC), and junior colleges are now known as community colleges.

The American community college played an integral role in history by providing opportunity for all through a commitment to an open access policy (Vaughan, 2000). Vaughan identified several forces in the reform of American education that influenced the creation of the community college. These forces included "the G.I. bill, the baby boom,

business and industry's demand for trained workers, the civil rights movement of the 1960s, federal student aid, and thousands of state legislators and laws" (p. 1). Parnell (1985) and Phillippe and Sullivan (2005) concurred with Vaughan, but argued that the establishment of the land-grant university and the Harry Truman Commission were instrumental events in American education history that supported the creation and growth of the community college.

Community colleges tend to be the heart of the community, serving as the means for cultural, social, and intellectual development (Hamrick, Evans & Schuh, 2002). Students receive individual attention because class sizes are much smaller than university classes. Community colleges are the primary educational providers for adult literacy and for those who speak English as a second language (Kirwan, 2006).

Initially, the junior college did not address the needs of society for trained workers (Phillippe & Sullivan, 2005). Intensified pressure from society – specifically the growing importance of science and technology, and the increased need for vocational instruction – influenced junior colleges to develop partnerships with business and industry to improve employee skills (Phillippe & Sullivan). Currently, the community colleges are essential to workforce development because they strive to address labor needs (Kirwan, 2006).

Community colleges are designed to provide associate in arts, associate in science, and associate in applied science degrees as well as workforce certificates (Gaff, Radcliff & Associates, 1997; Vaughan, 2000). The associate in arts degree was designed for students interested in earning a bachelor's degree by transferring coursework to a college or university. The associate in science and applied science degrees and certificate programs were developed to prepare students for immediate employment in their field of study and

are not intended for students interested in earning a bachelor's degree (Gaff, Radcliff & Associates, 1997).

Although community colleges are designed to provide associate degrees and workforce certificates, they are increasingly offering baccalaureate degrees (Phillippe & Sullivan, 2005). Some believe that community colleges offering baccalaureate degrees will change their open-access mission, while others maintain that doing so serves a critical role in meeting the needs of students who are commuting or living long distances from universities. Baccalaureate degrees at the community college are provided through partnerships with colleges and universities or, in many cases are now offered independently by the community college (Lorenzo, as cited in Floyd, Skolnik & Walker, 2000; Phillippe & Sullivan). Baccalaureate degrees are offered by the community college in cases where the degree meets a critical workforce need, such as in nursing, teaching or technology. Community colleges have survived many decades of change and are known for being innovative problem-solvers with the flexibility to address community and workforce development needs.

Community College Mission

The comprehensive mission of the community college drives the activities and goals of the institution. It is the all-inclusive mission of the community college that attracts a variety of people (Phillippe & Sullivan, 2005). Community college missions vary from institution to institution; however, community colleges are well known for their passion in serving their communities through access, developing partnerships, delivering in-depth instructional programs, teaching and learning, and cultivating lifelong learning (Vaughan, 2000). Phillippe and Sullivan explained that "an important mission of these institutions is

to develop the human capital that makes this country a powerful, global economic force" (p. 21). Knowles, Holton III, and Swanson (2005) argued that the true purpose of higher education offered by community colleges and universities is to teach adults how to change their thinking about themselves and the world in which they live.

Open-access admission to the community college provides many individuals with the opportunity to earn a degree. Commitment to access means more than just student enrollments for the community college; it is also the ability to remove barriers to education for individuals who are educationally underserved (Vaughan, 2000). Access came about as a result of the Higher Education Act of 1965, which made it possible for most people to attend college. The Act addressed the needs of low income students by providing federal funding to help them attain an education. Open access and equity provided students with support services designed to improve their academic success (Vaughan). These services included advising, financial assistance, flexible scheduling, tutoring, mentoring, and other activities intended to help students succeed not only intellectually, but also for life.

Community colleges are dedicated to providing access to education for everyone, but admit that many students lack preparation for college-level coursework. This does not mean that community college students are incompetent (McCabe, 2003; Mertig, 2003). Instead, it usually means that most students need extra training to meet the college-level competency requirements. Thus, college-preparatory coursework was developed and, today, further validates the community college's commitment to access, student success, and building community (Vaughan, 2000). College-preparatory courses are designed to help students who lack the academic ability to be successful in college-level coursework. These courses review fundamental concepts in general education to enhance the student's

knowledge-base so the student can meet the requirements to enroll in college-level courses (Vaughan). More than 60 percent of the students enrolled in a community college need college-preparatory training in math and reading. Therefore, persistence seems to be a concern for the community college because many under-prepared students are not completers and do not graduate (Horn & Neville, 2006).

Many community colleges have expanded to become multi-campus or multi-site institutions throughout their counties in order to adequately serve students from various populations. Community colleges are typically located within or near communities to better serve residents who desire the flexibility of services and course offerings that the community college provides. Phillippe and Patton (2000) argued that the community college offers an opportunity for people to learn at any time during their lives. Technology advancements and constant career and job changes establish the probability that learners will continue to enroll at the community college throughout their lives.

Community College Students

Community college students are from all walks of life, socioeconomic status, age, ethnicity, and academic experiences. Community colleges enroll current high school students, recent high school graduates, older students who are re-careering, students with English as a second language, and non-degree seeking students who are seeking enrichment courses in technology or the arts (Phillippe & Sullivan, 2005). The employment and lifestyle of community college students vary from the single parent who works full-time to a physician who is enrolled in courses for lifelong learning.

The one goal most community colleges have in common is fulfillment of students' academic and personal needs (Phillippe & Sullivan, 2005; Vaughan, 2000). Although it is

difficult to describe the typical community college student, the National Center for Education Statistics (NCES) reported in 2004 that the average student age is twenty-nine (Phillippe & Sullivan). Currently, women consist of more than 50 percent of the community college population and are approximately twenty-six years old, are parents, and are in school to learn a skill to adequately support their families. The community college population also has a considerable representation of minority students (about 33 percent), including those who are Black and Hispanic (Phillippe & Sullivan). Many minority students are considered first generation students because they are among the first in their family to attend college. The number of minority students enrolled at the community college is expected to increase (Phillippe & Sullivan).

More than 6.5 million students attend college on a part-time basis and assume the role of citizen-student, meaning they are bombarded with other concerns such as family, bills, working full-time, paying mortgage payments, and childcare issues (Vaughan, 2000). The citizen-student role is important for the community college to consider as because this role dictates the delivery of knowledge and how courses are taught and services provided. Although the community college focuses on the citizen-student, administrators, faculty and staff cannot neglect the student who seeks a more traditional experience and must remain open-minded. For this reason, the community college must remain adaptive in addressing societal needs as well as providing the college experience for traditional students. Faculty play a critical role in the college experience because they must demonstrate versatility in their teaching methodology in order to address various student abilities (Phillippe & Sullivan, 2005; Vaughan) and an ever-changing student population (Weimer, 2002)

Community College Faculty

Community college faculty are diverse in several ways according to individual, academic, teaching practice and professional characteristics (Fleming, 2002). All community college faculty are professionals in their fields and more than two-thirds work as adjunct instructors on a part-time basis (Phillippe & Patton, 2000; Phillippe & Sullivan, 2005; Vaughan, 2000). They are competent in their disciplines, dedicated to teaching and learning (Pescosolido & Aminzade, 1999; Weimer, 2003), and rely on their own educational experiences as a resource (Johnson, 2002; Paul, as cited in McMahon, 2005). For teaching techniques, they have varied understandings of theories and best practices in college teaching (Johnson; Weimer).

To maintain the spirit of the community college mission, faculty are primarily responsible for teaching and student learning (Huba & Freed, 2000; O'Banion, 1997; Phillippe & Sullivan, 2005; Vaughan, 2000). According to O'Banion, it is the duty of the faculty to focus on learning and provide various instructional modalities for engaging students in the classroom. Not only are faculty expected to ensure that students learn, but they must also assess student learning to ensure that their teaching techniques are working (Huba & Freed; O'Banion). Phillippe and Sullivan (2005) suggested that, for this reason, the community college should strive to provide faculty with professional development programs designed to educate them about the best practices used to reach the adult learner.

There are several expectations of the community college faculty that typically vary in accordance with full-time or part-time (adjunct) status. Adjunct or part-time community college faculty are not required to fulfill all of the responsibilities of a full-time faculty member. All faculty are required to uphold a level of delivering quality education that will

assist all types of learners. Faculty must also maintain office hours, before and after class, to assist students with academic or personal concerns. Only full-time faculty are required to attend departmental and curriculum meetings, serve as advisors, and participate in other college-wide initiatives and projects. Community college faculty participate in extracurricular activities such as club sponsor/advisor, community service project leader, and publication developer (Phillippe & Sullivan, 2005; Vaughan, 2000). Phillippe and Sullivan stated, "It is important to note that, although part-time instructors outnumber full-time faculty at many colleges, the majority of class sections are still taught by full-timers" (p. 98). Most full-time faculty members possess at least a master's degree in the discipline in which they teach and increasingly are acquiring doctoral degrees. Some community colleges grant faculty academic tenure while others have developed systems to routinely reappoint faculty in an effort to provide stability and the ability to progress (Vaughan).

Although faculty are considered to be experts in their disciplines, Fogarty and McTighe (2003) posited that they are beginning to recognize that teaching subject matter content is a better means for fostering critical thinking. They further suggested, "The content provides something to think about, but cognitive instruction provides the ways to engage students in dealing with that content in a thoughtful manner (or to meaningfully use content knowledge)" (p. 161). Paul (2006) agreed that content without thinking is meaningless because to teach content, we must teach the thinking that generates content. Therefore, faculty teaching strategies within the classroom are significant to student engagement and learning (McClenney & Peterson, 2006). Understanding teaching pedagogy and its impact on student learning is important.

Critical Thinking in the Community College Classroom

Critical thinking significantly influences the community college learner and is at the center of community college pedagogy (McMahon, 2005). Siegal (as cited in Bandman & Bandman, 1988) identified three reasons why teaching critical thinking is essential to student learning. The first reason for teaching students to think critically is to foster their capability to manage and critique a concept, situation, or problem. This enhances students' ability to understand their right to independently judge or evaluate information. The second reason is to grant students control of their lives by encouraging them to utilize the skill of inquiry and analyze ideas – even their own. The ability to question ideas allows individuals to be in control of their lives because questioning can help the thinker eradicate beliefs that are unsubstantiated and lack supporting evidence. The third reason is to promote level-headedness when deciding one's stance on a given situation, topic or program. Developing level-headedness when making a decision will greatly help the thinker determine if the information provided is reliable, trustworthy, and relevant to the discussion.

Although critical thinking is included in many course descriptions, textbooks, and college mission statements, it has yet to be seen in most classrooms (Brown & Freeman, 2000; McMahon, 2005). One problem associated with teaching students to think critically is that most teaching techniques provide detailed content that does not relate directly to the daily experiences in which students engage (McCrink, 1998).

The design of more than 95 percent of college classes consists of "lecture, lecture, lecture, quiz, mid-term, final exam and a large research paper" (Paul, personal communication, July 28, 2006). Paul (personal communication, July 28, 2006) goes on to say, "student engagement in most classrooms consists of sleep, sleep, sleep, and cram,

cram, cram." Paul stated that while the notion of a classroom lecture is not a bad concept, it is the disengaged lecture that is not effective for student learning. Van Gelder (2005) explained that watching others think critically will not help students learn how to do the same. Students must be engaged.

Most academic practices in higher education include faculty lecture and rote memorization (Bok, 2005; McClenney & Peterson, 2006; Paul, personal communication, July 27, 2006). Although there are several components of critical thinking, the literature is clear that memorization is not one of them (Bok, 2005; Paul, 2005). Morgan (1995) supported this idea in his statement that "critical thinking by any definition is far removed from rote memorization" (p. 339). The notion that memorization is not a concept of critical thinking (Morgan) is important for educators to realize in order to meet higher education's instructive outcomes and the needs of workforce development. The goal is to produce "autonomous thinkers who are not taken in by faulty argument, weak evidence or 'trendy' opinions, and can face life's problems as people capable of making rational decisions about whatever should confront them (McPeck, 1981, p. 35).

There are several issues to consider regarding critical thinking at the community college. This section will focus on three: the importance of critical thinking and student learning, student and faculty attitudes towards critical thinking; and, barriers to teaching critical thinking.

Critical Thinking and Student Learning

Student learning is often an outcome of community college pedagogy; therefore, faculty serve as facilitators of the learning process (Cranton, 2005; Ward, 2002). To become an effective facilitator of learning, faculty must respond to student needs and

provide support, build trust, and challenge student assumptions and beliefs. How can this be accomplished without critical thinking?

Elder (as cited in McMahon, 2005) proposed that critical thinking should guide all educational efforts at the community college. Critical thinking is important because information changes occur so rapidly within society that individuals must have the ability to practice good thinking skills to assess and evaluate information (Geersten, 2003). This is evident when assessments show how critical thinking is necessary for students to understand and use the content information they have learned (Pescosolido & Aminzade, 1999). When students learn to think critically, they develop an excitement for learning content that results in knowledge development.

New knowledge cannot be created without making rational judgments, and rational judgments cannot be made without asking good questions (Henry, 2002). Questioning helps students develop and interpret understandings. Henry goes on to say that learning is more meaningful and profound, more wide-ranging, and longer-lasting as a result of developing good questioning skills. To learn inquiry skills, students must be taught how to ask good questions which will result in developing critical thinking skills. When students master asking good questions, they will become better equipped to deal with conflicting ideas and stances on a subject or topic of conversation (Henry).

The process of learning to think critically will impact lifelong learning (Brookfield, as cited in McMahon, 2005). Exercising critical thinking skills permeates all ideas, thoughts, and beliefs, not only in school, but at home, in the workplace and in other areas within society (Paul, personal communication, July 28, 2006).

Student and Faculty Attitudes Toward Critical Thinking

According to Geersten (2003), Dewey considered the attitude of the thinker to be significant to the learning process because learning how to think is not worthwhile if the thinker is not considerate or sensitive. An individual with a poor attitude towards critical thinking may present a well-supported line of reasoning from a defensive standpoint based on his or her established views. Attitude is important (Geersten) because we need to develop a critically thinking society that promotes healthy living.

Most students are familiar with the teacher-centered approach to learning that focuses on content and rote memorization. Many critical thinking theorists disagree with the teacher-centered learning model (Dewey, as cited in Boris & Hall, 2005; Ennis, 2004; Nosich, 2005; Paul & Elder, 2005) and, instead, propose the learner-centered instructional approach. In the learner-centered instructional approach, the focus is on student interaction with the subject through questioning ideas and thoughts, active engagement, collaborative learning, and group projects to encourage student learning (Elder, 2006, personal communication, July 24, 2006; Huba & Freed, 2000; O'Banion, 1997). This approach includes teaching students to think critically. In the learner-centered instructional model, the student is responsible for his or her learning. Initially, tends this to be an uncomfortable model of learning for students (O'Banion, 1997). As students assume responsibility for their own learning, they become more familiar with components of critical thinking such as questioning, listening, and reasoning (L. Elder, personal communication, July 25, 2006).

Haix and Reybold (2005) and Brookfield (as cited in McMahon, 2005) asserted that students tend to experience difficulty when they practice critical thinking skills by considering a variety of thoughts that differ from their own. Acquiring and teaching critical

thinking skills is challenging for both students and faculty (Brookfield, as cited in McMahon, 2005). Students struggle with several attitudinal issues pertaining to critical thinking. Brookfield collected several student comments regarding their perception of critical thinking and highlighted three issues: impostorship, cultural suicide and loss of innocence.

In learning, Brookfield (as cited in McMahon, 2005) described that student's display an impostorship or play-acting role when participating in critical thinking activities because they feel deficient in their abilities. Tsui (2002) argued that students tend to compare themselves with their peers and develop an attitude that their input is not worthy of the conversation at hand. To improve confidence in their ability to think critically, Tsui recommended a classroom with a positive, cooperative and supportive environment designed to help students collaborate and make friends.

Another attitudinal issue faced by students as they develop critical thinking skills is cultural suicide which, according to Tsui (2002), requires the thinker to question valued family beliefs and habits and possibly dispose of them to develop a different perspective. For example, if an individual, who was raised to believe that eating spinach improves vision, reads an article inferring that eating spinach causes cancer, he or she may abandon previous beliefs and adopt a new viewpoint that is more congruent with current information.

Loss of innocence, according to Tsui (2002), is a concept where students who think critically gain a keen sense of deciphering information. Therefore, they lose the innocence they once had as a result of their newly developed ability to comprehend information. The loss of innocence complements Tsui's cultural suicide as the thinker questions family

beliefs and learns that his or her valued belief may not be the best way of thinking. For reasons noted, students find critical thinking to be a difficult concept to understand.

Critical thinking is not a difficult concept only for students. Faculty also struggle with understanding critical thinking pedagogy. A phenomenological qualitative study by Haix and Reybold (2005) explored faculty perspectives of undergraduate critical thinking at a liberal arts institution, found that faculty attitudes toward critical thinking significantly influenced student learning. The study consisted of faculty who considered themselves as having strong critical thinking skills and the ability to develop such thinking in their students. Faculty members were from the social sciences, natural sciences, humanities, and fine and performing arts departments. Findings indicated that faculty exhibited a good attitude toward teaching and agreed that their role includes refining and improving critical thinking, however, very few are prepared. The results also indicated that the attitude of the faculty in their approach to critical thinking development notably influenced student learning (Haix & Reybold). In general, the research recognized a translucent link between faculty theory of knowledge and their ability to reason as an expert (Clarke & Gabert, 2004; Reybold, 2003). Haix and Reybold noted, “thus it is reasonable to conclude that faculty attitudes about critical thinking have an effect on students’ acquisition of critical thinking skills” (p. 309).

Pascarella and Terenzini (2005) proposed that how a teacher transmits knowledge or receives knowledge greatly impacts student learning. Some faculty may believe that they are teaching students who are not capable of thinking critically and make no effort to cultivate critical thinking (Haix & Reybold, 2005). For this reason, it is important for

faculty to acknowledge and ensure that their biases do not negatively impact students' ability to learn to think critically (Haix & Reybold).

Barriers to Teaching Critical Thinking Skills

For the most part, faculty support the development of critical thinking skills as a part of their teaching responsibilities; however, there are barriers to their ability to teach this concept. These barriers include the notion that faculty are typically not familiar with the definition of critical thinking or how to facilitate it in students (Haix & Reybold, 2005). Paul (as cited in McMahon, 2005) supports the concept of barriers to teaching critical thinking in his description of the current state of critical thinking:

> (1) most faculty at all levels lack a substantive concept of critical thinking; (2) most faculty don't realize they lack a substantive concept and instead believe they understand critical thinking sufficiently and are already successfully teaching within their discipline; (3) despite "reform" efforts, lecture, rote memorization, and (largely ineffective) short term study strategies are still the norm in college instruction and learning today (p. 27).

Students, then, are members of an educational experiment because higher education does not automatically prepare graduate students to employ effective pedagogical techniques at the university level (Clark & Gabert, 2004). Clark and Gabert further proposed, "The state of faculty preparation to teach content areas is a higher variable at best, and inadequate at worst, leaving many young faculty members to develop methods experientially, by trial and error" (p. 31). The Commission on Teacher Credentialing in California and the Center for Critical Thinking at Sonoma State University conducted a study in 1995 of university faculty throughout California. The study, which supports Paul's

synopsis of why faculty struggle in teaching critical thinking skills, found that 89 percent of the faculty surveyed considered their teaching methodology to be critical thinking-based, but only 19 percent of these very same faculty could explain the definition of critical thinking (Bissell & Lemons, 2006).

Faculty resistance to teaching critical thinking skills is another barrier to student learning (Haas & Keeley, 1998). Many faculty have not accepted critical thinking as an indispensable skill and may not even understand its meaning because the definition has been revised over the years (Ennis 1987; Paul, 1993; Paul & Elder, 2006). Several studies have found that faculty members' comfort with teaching critical thinking skills can be gauged by their exam methodology. For instance, Barnes (1983) found that many faculty members asked exam questions that require the use of low cognitive thinking, since most faculty employ the pattern of lecturing and then assess student learning by asking low-level questions. Braxton and Nordvall (1985) concurred with Barnes as they reviewed more than eighty-three college exams and found that less than five percent of the exam questions required the use of an evaluation or assessment skill important to critical thinking.

There are many additional reasons why faculty resist teaching critical thinking skills. One such reason is that they themselves may be deficient in exposure to critical thinking during their educational experience (Haas & Keeley, 1998). Faculty may lack confidence in teaching students how to think critically because they themselves have not been trained as critical thinkers during in their educational experience (Clarke & Gabert, 2004; Haas & Keeley).

Another reason for faculty resistance to teaching critical thinking skills is time management and their perception of the need to focus on subject content (Haas & Keeley,

1998). Most faculty who do not teach students to think critically are consumed with their goal of ensuring that students comprehend the content, and this may cause the faculty to view critical thinking skills as being incompatible with course information (Haas & Keeley). According to Paul (personal communication, July 25, 2006), content is the "what" and the process is the "how" of instruction. Content is what you would like the student to learn and the process is the method you will use to ensure learning occurs. Paul and Elder (personal communication, July 24, 2006) argued that all content is the product of critical thinking, and without critical thinking, content would be irrelevant.

Course textbooks are also challenging when it comes to faculty teaching critical thinking skills. Most textbooks are written with the goal of faculty covering course content, and do not provide instruction that requires the student to evaluate or compare information to facilitate critical thinking (Haas & Keeley, 1998). Faculty teaching aids that accompany textbooks are also problematic when it comes to teaching critical thinking. Most textbooks provide multiple choice and true/false test banks for easy grading. Emphasizing critical thinking requires enhanced creativity in teaching and assessment of student learning (Haas & Keeley). Therefore, many faculty may be unenthusiastic about discontinuing the use of traditional multiple choice tests. Assessment for critical thinking is difficult for faculty because it requires more open-ended questions and less multiple-choice or true/false test questions.

Nursing as a Profession

There is evidence in archaeological findings that the art of nursing was performed in ancient civilization (O'Brien, 1999). Nursing as a profession received its name from the Latin word *nutrio*, meaning to nurture. Caring for the sick was an honor in the early church

and many religious leaders, such as deacons, monks and sisters, served as nurses (O'Brien, 1999).

Hospitals were staffed by nurses as early as the late 1700s. The level of care provided was similar to that of a mother caring for her sick child by supplying basic life needs (Boschma, 1994). The first structured educational opportunity for nurses began in 1798 when Dr. Valentine Seaman educated those interested in nursing at New York Hospital. A series of 24 lectures was offered on various topics including anatomy, nursing children and training in the delivery of babies (Idczak, 2005). During the early 1800s, the Protestant Sisters of Charity organized the first known school of nursing in England. The Protestant Sisters of Charity offered nursing education within an eight-week period of time (Palmer, 1985). Although nursing education started in England, its roots as a profession are grounded in the teachings of Florence Nightingale.

The History of the Nursing Profession

During the Crimean War in 1854, Florence Nightingale and other nurses cared for injured military men at the Barrack Hospital in Scutaro, Turkey (Dossey, Selanders, Beck, & Atwell, 2005). After the Crimean war, Nightingale began establishing reform and creating change in the field of nursing (Dossey, Selanders, Beck, & Atwell; Selanders, 1993). She began to create change by teaching staff at the Army Medical School the importance of maintaining excellent records and governmental statistics. She also taught the Army Medical School staff how to develop new systems for providing food and supplies during wartime conditions, and how to help establish principles of hygiene and public health in India. Nightingale is widely recognized by the nursing profession for her accomplishments in developing sanitary protocol, and for delivery of quality nursing care

and social reform (Selanders). Nightingale defined “the nature of nursing clearly and how nursing was distinctly different from, but not subservient to, medicine” (p. 7). With a sound educational foundation, nursing as a profession began to take on its own distinctive character.

Nightingale is most recognized for her achievement of developing principles for formal nursing education and practice. In 1860, Nightingale created a school of nursing at St. Thomas Hospital in London, England with approximately 10 students (Palmer, 1985; Selanders, 1993). This hospital-based nursing program basically provided hands-on training. Nightingale viewed nursing to be an art of caring relationships between nurses and patients. The Nightingale Model of nursing education includes the combination of classroom and clinical experience, a tradition of practice that still exists in today’s nursing education programs. The nursing profession greatly benefited from Nightingale’s legacy by developing a distinct education, providing quality care in a clean environment, and developing an independent identity. Nightingale is known as the founder of nursing because of her beliefs about and influences on the development of nursing (Selanders).

In 1873, nursing began to take the form of a science. The first instructor of nursing was appointed at the Nightingale School of Nursing (Donahey et al., 1997). The influence of science started to develop during this era. Physicians began to specify the knowledge and skills they wanted nurses to have. These skills included anatomy, sanitary bandaging, pharmacology, and chemistry. The influence of science changed the focus of nursing from a desire or calling to care for the sick to formal educational training designed to prepare individuals to care for the sick (Donahey et al.)

The new form of nurse education began to expand throughout the world and, in the late 1800's, nursing became a profession within the United States.

Nursing In the United States

The evolution of nursing in the United States resembles Nightingale's system in England (Idczak, 2005). Instead of the Crimean War, the United States was in the midst of the Civil War. In the United States, Clara Barton and Dorothea Dix were two exemplary nursing leaders who were influential in providing quality care for soldiers. Nursing education started in New York and Boston as hospital-based programs that provided nursing education using the Nightingale model (Idczak).

Nurse education at the university level in the United States began in the 1900s with Teacher's College of Columbia University (Evans & Lang, 2004). For the first time, new concepts for nursing emerged, going beyond caring for the sick and injured and including health and prevention of illness (Donheny et al., 1997). Nursing became a form of art and science. The role of nurses was further redefined after World War II when the profession began to develop the ability to identify specific patient problems where nurses could assist in providing a resolution. Nursing programs began to be discontinued at hospitals and began emerging at universities, further developing the science of nursing through research and scientific methodology (Donhey et al).

Nursing programs at the university offered a major change in the nursing education environment because, up to this point, most nursing students lived in a residence hall next to a hospital-based program. University campus living is quite different from the dorm or residence hall next to the hospital based program. In the dorm next to the hospital-based program there were fewer opportunities for distractions because hospital-based programs

provided more of a close-knit family environment than university programs. The curriculum of the hospital-based program was different than the curriculum at the university. University programs taught nurses how to think like nurses, unlike hospital-based training programs which primarily taught students nursing concepts (Chinn, 1994; Boschma 1994). Thus, the focus of nursing changed from the art of nursing to the science of nursing. This focus changed the practice of nursing to problem solving for of outcome-based delivery of care (O'Brien, 1999). As a result, nursing theory emerged and began to grow (O'Brien).

Several theories were cultivated to substantiate and categorize nursing as a distinct science. Examples of these theories include descriptive and abstract models. The descriptive model views phenomena and describes what is directly observed and inspected. This model is similar to a reporter. In the descriptive model, the nurse would critically inspect a patient situation and describe what was viewed and examined. Abstract models consider the ability of the patient to adapt while experiencing the continuum of health to illness (Carper, 1978). In the abstract model, the nurse is seeking patient tolerance and method of adjusting to various stages of health. Although nursing theory development was designed to simplify the role of the profession, numerous theories were developed and further complicated the purpose and goals of the profession.

In the 1960s, community college nursing programs were developed by Mildred Montague (Catalano, 2006) and deemed necessary as the need for nurses exceeded the number of nurses available to adequately serve a growing population. Community college nursing programs were designed to provide quality bedside care (Catalano, 2006; Cherry & Jacom, 2002). These programs provided qualified nurses in a shorter period of time than

the hospital-based and university nursing programs. Technically, the community college programs were designed to focus on skill acquisition, while the baccalaureate degrees focused on critical thinking, making meaning of diverse experiences, and high-level knowledge attainment (Boland & Finke, 2005).

In summary, Florence Nightingale was the founder of the nursing profession and the pioneer who lead the fight for the nursing profession to be considered a separate profession that is not subservient to other medical professions. Nursing as a profession was introduced as an art, focusing on the tasks and duties of caring for a patient. Nursing evolved to become a science as its educational training grew to include a knowledge base and the skills needed beyond the notion of caring for the patient. Nursing education was initiated as hospital-based programs; however, as the profession developed, nursing programs were offered at universities and community colleges. Nursing in the United States paralleled Nightingale's path when Clara Barton and Dorothea Dix aided soldiers during the Civil War. Nurse education in the United States started in hospital-based programs as an art and evolved to a science with programs offered in colleges and universities.

Critical Thinking in the Nursing Profession

The ability to think critically is a distinguishing characteristic of a competent nurse (Banning, 2006) because it is one of the most important skills used by nurses to make inquiries, appraise, plan, apply, and evaluate patient care (Boychuck-Duchsher, 1999; Catalano, 2006). Nurses who think critically are processing and forming ideas, rather than memorizing and duplicating the ideas of others, or accepting information without critical

thought about what they hear or read (Profetto-McGrath, 2003). The critically thinking nurse is capable of eagerly finding solutions to resolve or address a situation.

Critical thinking is important to the nursing profession in meeting the needs of workforce development, providing safe patient care, and decreasing medical errors. Keil (2004) proposed that the delivery of safe patient care will not occur exclusively with new technology. Instead, it will occur as a result of healthcare professionals who possess the critical thinking ability required to effectively utilize current technology and competently assess patient needs. Emphasis on critical thinking skills for nurses gained recognition due to the need to respond to a rapidly changing workforce environment (Alfaro-LeFevre, 1999; Catalano, 2006; Higgs & Jones, 2000; Simpson & Courtney, 2002). Simpson and Courtney further supported critical thinking for nurses by proposing the notion that "nurses must think critically to provide effective care while coping with the expansion in role associated with the complexities of current health-care systems" (p. 89). In order for nurses to effectively deal with the changing face of healthcare and its increased demands, they must be experienced higher-level thinkers with skilled reasoning capabilities (Alfaro-LeFevre; Simpson & Courtney).

Nurses are now being charged with responsibility for providing skilled, multidimensional care in multiple settings using complex data (Catalano, 2006; Simpson & Courtney, 2002; Stone, Davidson, Evans, & Hansen, 2001). Therefore, nurses should be prepared to function as safe, knowledgeable, perceptive, and innovative practitioners in an ever-changing environment. Because the need for critical thinking skills is prominent in the nursing profession (Catalano, 2006), it is imperative for nursing programs to ensure that nursing program faculty teach students critical thinking skills (Simpson & Courtney).

Employers continue to express the significant importance of the need for nursing graduates being proficient in exercising critical thinking skills. Employers also continue to emphasize how critical thinking impacts the delivery of quality and safe patient care. Nonetheless, nurse graduates continue to be deficient in critical thinking skills.

Critical Thinking and the Healthcare Workforce

Business and industry continue to express their concerns regarding entry level employees and their ability to perform basic workplace skills. The literature provides several studies regarding the skills workers need according to employers (Kearns & Doyle, 1988; Maricle, 2003; Pithers & Soden, 2000). When addressing workplace skills, two national studies are frequently referred to: The Secretaries Commission on Achieving Necessary Skills (SCANS) and the study by the American Society for Training and Development (ASTD). Both studies suggest that a serious gap exists between employer expectations and entry level employee abilities, and the studies identified several skills an employee must have to be successful in today's economy. Both reports identified thinking or creative thinking skills as an essential competency identified as a skills gap and one that employees must have for job success.

The workforce, also known as the labor force, is the most essential aspect of service industries (Larson, Osterweis, & Rubin, 1994). This is especially true in healthcare since patient outcomes greatly rely on the relationship between the patient and practitioner. The healthcare workforce is a significant issue for America because the country is faced with challenges such as the critical shortage of healthcare providers and coping with strenuous issues of cost, access, and quality of services (Barton, 2003; Larson, Osterweis, & Rubin). Sochalski (2002) postulated in 2000 that the total active nursing workforce was more than

2.2 million or 82 percent of the entire licensed profession. Delivery of quality care by nurses to patients is a critical issue facing the health care industry. Healthcare employers identified critical thinking as a skills gap for new nurses. In a study conducted by the National Council of State Boards of Nursing (NCSBN) research services, 1,230 managers from hospitals, home healthcare agencies, and nursing homes were surveyed about preparation of new nurses for the practice setting and the issues surrounding the appropriate preparation and utilization of assistive personnel. Findings of this study indicated that new nurses are under-prepared in the delivery of safe patient care. When it came to importance of skill sets in practice settings, employers ranked critical thinking or clinical decision-making skills the highest needed skills for nurses (Smith & Crawford, 2003).

The need for nurses to have the capability to think critically when delivering quality and safe patient care is supported by a number of authors (Banning, 2006; Brooks and Shepard, 1990; Catalano, 2006; Del Bueno & Hott, 2001; Ford & Profetto-McGrath, 1994; Krammer, 1993; Miller & Malcolm, 1990; Paul & Heaslip, 1995; Profetto-McGrath, 2003; Simpson & Courtney, 2002; Tschikato, 1993). Critical thinking is so important to safe patient care that many hospitals offer programs to health practitioners to improve the quality of services and care provided (McCarty & Blumenthal, 2006). In the second annual HealthGrades Patient Safety in American Hospitals Study, critical thinking was one of the most essential reasons why hospitals found to provide safe patient care were ranked highly (Shapiro, 2005). Shapiro goes on to say, “A ‘culture of safety’ requires rapid identification of errors and root causes and the successful implementation of improvement strategies,

which can only be achieved through strong leadership, critical thinking, and commitment to excellence" (p. 1).

Critical Thinking in Nursing Education

Nursing as a profession adapts quickly to change (Alfaro-LeFevre, 1999; Catalano, 2006; Higgs & Jones, 2000; Simpson & Courtney, 2002) because society continues to express new demands and needs, causing the discipline to become a proponent of transformation and improvement in the delivery of quality care, the assessment of care, and educational programs. Therefore, nurse educators must be cognizant of health care trends in order to provide adequate teaching practices that will yield competent nurse graduates and impact health care delivery and the profession as a whole (Catalano). These trends are multifaceted and frequently influence nursing education. Trends include: performance-based competency, shortage of faculty, shortage of nurses, demographical changes, shorter hospital stays, and increased demands on transitional care, increased technology use, globalization, educated patients, and increased complex healthcare (Catalano; Cherry & Jacob, 2002; Clayton, 2006).

Cherry and Jacob (2002) postulated that trends bring about challenges for faculty because they impact the nature of the content that is taught and the structure of the curriculum. Trends in healthcare identify current issues, techniques, or methods designed to improve patient care. These trends impact nursing program faculty and students. As trends change, pedagogy within the nursing classroom must change accordingly. Faculty are required to teach within time constraints of the classroom schedule and seldom have time for reflective and creative thinking because they are often focused on ensuring that students exhibit mastery of curriculum outcomes and competencies. Faculty are often stressed while

trying to teach fluctuating content with very few resources to an ever-changing student population (Cherry & Jacob).

Healthcare trends also impact nursing students as they strive to meet the expectations of faculty with multifaceted teaching techniques. Many trends call for the maintenance of best practices which require faculty to provide competency assessment based on performance. As a result, students are impacted as they deal with varied and conflicting clinical care and sites, and as political and economic changes influence their experiences.

Throughout the past twenty years, the notion of nurses thinking critically has been the topic of discussion (Scheffer & Reubenfield, 2000). To bring critical thinking to the forefront, a transformation must occur. According to the National League for Nursing (NLN), a transformation of nursing education is warranted because "despite significant changes in the healthcare system and in nursing practice, many nurse educators continue to teach as they were taught and for a healthcare system that no longer exists" (NLN, 2005, p. 1). The National League for Nursing (2005) further proposed that the transformation should include a change in the education process that requires the student to be an active participant in his or her educational process. It also involves hiring flexible, competent nursing program faculty to address an ever-changing, diverse student population with individual needs. Nursing educators consider critical thinking to be significant and central to the discipline of the profession "because nurses work more with acutely ill patients, deal with complex technology, confront challenging, ethical issues, and cope with a constantly changing knowledge base" (Boychuk, 1999, p. 570). Nurses are tasked with the job of

providing safe patient care using new and innovative machinery and equipment, including computers and other technological apparatuses.

Healthcare providers increasingly are relying on nurses' ability to exercise critical thinking skills to provide proper and varied care for the sick. The challenge for nurse educators is to produce critically thinking students. Thus, the need for meaningful teaching strategies relies on techniques other than rote memorization (Clayton, 2006). Lowenstein and Bradshaw (2001) proposed, "If nursing education implements an effective and comprehensive curriculum, identifies useful teaching/learning strategies to teach critical thinking, and applies appropriate evaluation measures, then students will be assured that they are leaving nursing programs with skills in critical thinking" (p. 32). Therefore, three components of teaching and learning should be considered: attitude, knowledge and skill.

Faculty play an important role in developing an attitude of inquiry by developing a teaching methodology that requires students to ask questions, find answers and evaluate options in patient care delivery (Lowenstein & Bradshaw, 2001; Mertig, 2003). The attitude of curiosity and caring must be developed at the beginning of the nursing program and continue through graduation. To learn in an environment that promotes inquiry as a learning tool provides students with the freedom needed to question ideals, facts and information, and to improve thinking to develop skills that will enhance clinical judgment (Mertig).

Acquisition of knowledge is also important for nursing students to acquire critical thinking skills. The nursing program curriculum guides what and how much content is taught, an aspect that continues to frustrate faculty because the types of diseases and illnesses are forever growing and changing (Lowenstein & Bradshaw, 2001). Faculty must

assess the content within the curriculum and cover pertinent content designed to develop a knowledge base that can be applied to various situations. Knowledge transmission must be successful in addition to teaching critical thinking skills, a combination of tasks that is difficult to perform. Therefore, Lowenstein and Bradshaw (2001) suggested four principles for teaching critical thinking: the process should be conducted systematically through stages; concepts/skills should be clearly explained; students should reinforce their understanding of concepts/skills by demonstrating comprehension; and teaching strategies should blend critical thinking with typical topics (Lowenstein & Bradshaw) using real life situations and story-telling to break down barriers and build communication (Mertig, 2003); and, faculty should guide students through the steps to knowledge acquisition. Exposure and participation are techniques to enhance student knowledge. Exposure begins at the introductory level when faculty teach the fundamental concepts of nursing.

Although lecture is an effective strategy at the beginning of the nursing program when content is introduced, students will need subsequent learning opportunities that allow manipulation of and the ability to process content. Faculty can use several strategies to deliver the basic concepts of nursing: study guides, computer-assisted instruction, case studies, group discussions, summary writing, patient care plans, and participation in healthcare settings. Participation requires that students interact directly with a nursing experience or situation. By participating and being actively involved, students use recurrent thinking that derives from foundational concepts (Mertig, 2003).

Skill acquisition occurs after development of the nursing attitude of inquiry and knowledge acquisition of the nursing profession. It allows students to practice their knowledge and skills in real-life situations in clinical settings. Demonstrating skills

typically happens within a learning lab housed at the college where the program is offered. Once students master skills in the lab, they practice knowledge and skills in a clinical setting with real patients (Lowenstein & Bradshaw, 2001).

Clinical experiences serve as the connection between content taught in the classroom and skills demonstrated while working with real patients in a medical setting. In clinicals, students demonstrate skills while caring for patients (Lowenstein & Bradshaw, 2001). Almost all accredited community college nursing programs include a clinical course each term to complement content taught in a classroom lecture or theory course. Clinical experiences provide nursing students with the ability to develop the expertise to transition from a novice to expert nurse.

Facione and Facione (as cited in Profetto-McGrath, 2002) postulated that the education of all successful professionals requires attention to practical experience, the content of the discipline, and critical thinking. This concept is specifically true for nursing and is evidenced by Khosravani, Manoochehri, and Memarian (2005) who proposed that:

> The skills and dispositional attributes of critical thinking are central to nursing and that they embody a search for best knowledge in a given context. They demand impartiality to new evidence and a readiness to reconsider judgments. They value a focused and diligent approach to clinical reasoning and they require a tolerance of multiple perspectives when those perspectives can be supported by reason and evidence (p. 1).

Although critical thinking is at the forefront of the nursing profession and education, and is mandated by the National League for Nursing, it is a concept often misunderstood by faculty and students. This misunderstanding is reinforced by the notion

that faculty and students utilize the term *critical thinking* interchangeably with components of critical thinking such as problem solving and reflective thinking, although the terms are not compatible by definition (Simpson & Courtney, 2002). Because higher education, the National League for Nursing, workforce, and educators realize the importance of nursing students' ability to demonstrate critical thinking skills, it is vital that administrators and department directors understand faculty perceptions regarding their responsibility to actually teach nursing students critical thinking skills. However, nursing graduates continue to lack critical thinking skills (Simpson & Courtney), which further supports the need for a study exploring the perceived responsibilities that faculty have in teaching these skills to nursing students.

Critical thinking is a distinct characteristic of a competent nurse (Banning, 2006) because nurses analyze patients, data and other information to provide care. Several authors support the need for nurses to think critically because it impacts the delivery of quality and safe patient care (Banning, 2006; Brooks & Shepard, 1990; Catalano, 2006; Del Bueno & Hott, 2001; Ford & Profetto-McGrath, 1994; Krammer, 1993; Miller & Malcolm, 1990; Paul & Heaslip, 1995; Profetto-McGrath, 2003; Simpson & Courtney, 2002; Tschikato, 1993) while working in various settings (Catalano; Simpson & Courtney; Stone, Davidson, Evans, & Hanson, 2001). However, employers report that nursing graduates lack critical thinking skills (Simpson & Courtney). For this reason, nursing program faculty must focus on teaching strategies and techniques designed to influence development and improvement of critical thinking and reasoning.

Chapter Summary

This review discussed the concept of critical thinking, community college pedagogy and nursing as a profession. Critical thinking is not a new concept and has multiple definitions. For this study, critical thinking is defined in accordance with the Richard Paul Model, which proposed that critical thinking is purposeful reasoning that utilizes a set of standards and criteria to evaluate thinking and heighten awareness of personal beliefs and the views of others to improve and take responsibility for thinking. Not only is critical thinking difficult to define, it is also challenging for educators such as community college faculty to assess. There are numerous inventories designed to assess critical thinking ability; but, many theorists suggest that further attempts should be made to improve assessment tools.

Community colleges are higher education institutions that provide access and learning experiences to a diverse student population with various learning abilities and personal needs. The literature indicates that faculty understand the importance of critical thinking; yet, they tend to use rote memorization within the classroom. Employers continue to seek employees who are critical thinkers, especially the healthcare workforce since the lives of others depend on the ability of healthcare practitioners to demonstrate components of critical thinking such as reasoning and problem-solving skills in order to provide safe patient care.

There are numerous studies acknowledging faculty agreement that the development of critical thinking skills is important for adult learners in postsecondary education; however, the literature is limited in the area of perceptions that two-year nursing program faculty have regarding their responsibility to teach critical thinking within the classroom

(Simpson & Courtney). The lack of literature in this area provides credibility for this study exploring the perceptions of associate degree faculty regarding their responsibility to teach critical thinking skills to nursing students.

Nurse educators must acknowledge the importance of critical thinking by effectively teaching critical thinking within their classrooms and clinical settings on a daily basis. The need to know what faculty believe regarding their responsibility to teach critical thinking skills to nursing students is essential for program directors or department chairpersons when addressing the goal of graduating competent nurses.

CHAPTER III

RESEARCH METHODOLOGY

Introduction

The methods and methodology chapter explains how the research project was conducted. This section provides a rich, in-depth summary regarding the philosophy, paradigm and methodology, and methods of the research project. This summary includes the explanation and rationale for the research design and structure, sample and sampling technique, research questions, data collection and analysis methods, quality and verification assurance, and ethical research methods.

This study investigated specific questions to achieve a better understanding of how nursing program faculty perceive their responsibility to teach students critical thinking skills. This study significantly contributes to the body of knowledge and heightens the understanding within higher education of nursing program faculty perceptions. This heightened understanding and awareness will help improve student learning and professional success. In addition, this study will provide guidance to department directors regarding subject matter for nursing program faculty development training.

Philosophical Framework

The purpose of this study was to explore the lived experiences of nursing program faculty members and convey the meaning of their understanding of their responsibility to teach students critical thinking skills. As with any study, a philosophical framework must be declared to develop the research methodology.

All researchers must have an overarching philosophical framework that will serve as the foundation for research methodology (Creswell, 1998; Patton, 2002). A

philosophical framework plays an important role in a research study because it determines how one makes sense of intricacies in the real world, and guides judgments and how decisions are made. A philosophical framework also guides the researcher in the methodology of the study (Patton, 2002). Phenomenology is the philosophical framework that guided this research project of exploring nursing program faculty perceptions regarding their responsibility to teach students critical thinking skills.

As a philosophical framework, phenomenology was developed by Edmund H. Husserl, a German philosopher (Creswell, 1998; Patton, 2002). Husserl explained the meaning of phenomenology as how people interpret and experience phenomena in the real world. Husserl's "most basic philosophical assumption was that we can only know what we experience by attending to perceptions and meanings that awaken our conscious awareness" (Patton, p. 106). In addition to Husserl, several other researchers, such as Heidegger, Sartre, and Levina, agreed that consciousness, human existence, or the nature of being should be the focal point of philosophy (Giorgi, 2005).

Phenomenology as a philosophical paradigm plays a critical role in a social sciences research study because it expounds truth and knowledge that can be developed only by interaction with people through language and shared experiences (Patton, 2002). Phenomenology as a philosophy does not concern itself with the facts of a situation, but is more interested in when and how an individual relates to a situation (Patton). Phenomenology emphasizes the essence of what the individual experienced. Phenomenological researchers depend greatly on interviews and other verbal or written instruments and experiences (Slife & Williams, 1995). Phenomenology "is a shift of focus from physical nature, cause-effect analyses, impersonal forces and their manipulation and

control to human subjectivity, intentionality, the meaning of actions, and the freedom and responsibility that intrinsically belong to them" (Giorgi, 2005, p. 77).

According to Creswell (1998), the phenomenological method is the best framework for studies exploring the true meaning of participants' lived experience. Therefore, for the study of nursing program faculty perceptions regarding their responsibility to teach students critical thinking skills, phenomenology is well-suited for exploring these lived experiences. Phenomenology proposes that individuals are not merely uninvolved spectators of life; instead, individuals are active participants who help build and give meaning to their lives.

The researcher uses philosophical assumptions to guide the research methodology (Creswell); therefore, the philosophical assumption of phenomenology guided this study because nursing program faculty shared their instructional experiences and meaning in relation to teaching students critical thinking skills. The five philosophical assumptions are: ontological, epistemological, axiological, rhetorical, and methodological (Creswell, 1998). Each assumption is utilized within research studies.

Ontological assumptions refer to the nature of reality. In the phenomenologist's framework, ontological assumptions consider multiple and subjective realities according to the participants in the study (Creswell, 1998). The phenomenological researcher seeks multiple realities since each participant will express his or her lived experience and interaction with the phenomenon under study (Moustakas, 1994). Subjectivity also refers to the nature of reality and can be defined as "judgment based on individual personal impressions and feelings and opinions rather than external facts" (World Reference Dictionary, 2006). According to Henrich (2003), "subjectivity can only be regarded and

function as a principle if the elementary knowledge we have of our own self allows us to reach a variety of conclusions" (p. 9). Subjectivity controls everything within a research study including topic choice, the hypothesis, and methodology (Ratner, 2003). The nature of reality for this phenomenological study is subjective and seeks multiple realities and findings that are based on the experiences and words of nursing program faculty.

Epistemological assumptions, also known as the nature and origin of knowledge itself, refer to the relationship between the researcher and the participants of the study. The goal of the phenomenologist is to create a connection between the researcher and his or her participants in the study (Creswell, 1998). Epistemologically, the researcher should remove all barriers that would cause distance between the researcher and participant (Guba & Lincoln, 1988). For this study, the researcher engaged participants using an online, confidential, and secure researcher web-site. The researcher web-site was designed to allow the researcher to communicate with the participants for clarification of questionnaire responses and allowed participants to ask the researcher questions as well as respond to the researcher's questions.

Axiological assumptions refer to the role of values in a study. The phenomenologist acknowledges that the nature of the study is value-laden and actively admits his or her values and biases related to the study. In this study, the research is considered to be value-laden and the researcher openly acknowledges values and biases related to nursing program faculty perceptions of their responsibility to teach students critical thinking skills.

The rhetorical assumption refers to the language to be used in a study. The phenomenologist uses specific terms, and a personal and literary narrative in the study. Rhetorical researchers will use natural generalizations (Guba & Lincoln, as cited in

Creswell, 1998). A phenomenologist will utilize a language "that becomes personal, literary, and based on definitions that evolve during a study rather than being defined by the researcher at the beginning of a study" (Creswell, p. 77). The language to be used for this study utilized terms defined by participants and provided a rich narrative and significantly intense descriptions of data.

Methodological assumptions refer to the research process. The phenomenologist uses an inductive approach generating classifications from participants rather than identifying classifications prior to awareness of participant information regarding their lived experience with the phenomenon of study. For this study, the researcher began with an inductive approach with a detailed focus, and then expanded to a broad-spectrum and emerging design with the ability to revise accordingly as trends change (Patton, 2002).

Rationale for a Qualitative Study

The research method depends greatly on the definition and explanation of philosophical assumptions that will drive the study. Because this study sought to understand a phenomenon and explore nursing program faculty perceptions of their lived experience in teaching students critical thinking skills, an inductive approach is appropriate; therefore, the qualitative research design is suitable. Qualitative inquiry provides voice and individuality to those involved (Depoy & Gitlin, 2003; Patton, 2002), and is a key component of exploring nursing program faculty members' perceived responsibility to teach students critical thinking.

Once the philosophical framework has been identified, the researcher selects the appropriate research method (Barbour & Barbour, 2003). Research methods, according to Crotty (2003), are defined as the procedures that the researcher uses to collect and evaluate

information-specific research query or theory. As a phenomenological research study, the qualitative research design is the best approach for this study because, like phenomenology, the qualitative approach seeks to understand human experiences and create meanings (Creswell, 2003; Patton, 2002).

Qualitative researchers view the literature as the component of the study that justifies existence of the problem. To specify the purpose of the study, qualitative researchers start with a general purpose that does not trap the researcher into a rigid design. Qualitative researchers begin by focusing on open-ended questions rather than deductive theoretical questions (Patton, 2002). An example of an open-ended question for this study is, "In your opinion, what are the characteristics of critical thinking?"

Researchers choose qualitative strategies when the focus of the study is on real life situations and the emotions, feelings, motivation, and meanings of those involved (Patton, 2002). The researcher is engaged in the research and has direct contact with participants. To explore nursing program faculty perceptions of their responsibility to teach students to think critically, qualitative methodology allows the researcher to focus on nursing program faculty and their real life situations, opinions, and personal understanding regarding their responsibility in teaching students critical thinking skills.

Qualitative and quantitative research characteristics and objectives are different. Qualitative research is less concerned with statistical data; instead, it focuses on the emergence of common themes that systematically explore variations in human experience. Quantitative research analyzes and interprets data in a statistical manner, describing trends and comparing or predicting outcomes. A study exploring how nursing program faculty perceive their responsibility to teach students critical thinking skills will attempt to reveal

various nursing program faculty perceptions in order to illuminate common themes; therefore, a qualitative study is appropriate (Patton, 2002).

Qualitative researchers identify the research problem with a general approach such as an exploratory question and with the goal of gaining better understanding of a phenomenon. Quantitative researchers identify the research problem by describing trends, and the problem tends to be of an explanatory nature. Because this study explored the understanding of how nursing program faculty perceive their responsibility to teach students critical thinking skills, a qualitative approach was selected (Patton, 2002).

Sampling in a qualitative study is purposeful, intentional, and small in size to serve the researcher in his or her goal of examining phenomena in depth in order to fully understand an experience (Burns & Grove, 2001; Patton, 2002). Sampling for the qualitative researcher is flexible with a high propensity for change or shift in emphasis (Barbour & Barbour, 2003). Sampling for the quantitative researcher is rigid with less flexibility. Quantitative samples are large in size and typically randomly selected for generalization (Patton, 2002). Sampling for this study will be purposeful and intentional as the research project will seek individuals who experienced the phenomenon of study.

Qualitative data is often collected through interviews, but can also be collected by observation, open-ended questionnaires, videotaping, document review, and other methods designed to improve the understanding of humans through commonalities or culture (Denzin & Lincoln, 2000). Qualitative researchers analyze or collect data through text analysis, descriptions or themes, or by utilizing larger meanings of findings (Denzin & Lincoln). Quantitative researchers collect data using predetermined instruments on a large population of participants with numerical results. For the study exploring nursing program

faculty perceptions of their responsibility to teach critical thinking skills to nursing students, an online, open-ended questionnaire was utilized to collect data which yielded detailed descriptions of participants' lived experience. The goal of obtaining a better understanding of participants' lived experience validates the qualitative paradigm as the best approach for this study. The reporting and evaluation of qualitative data must be flexible and emerging, reflexive and unbiased (Barbour, 2003; Patton, 2002). Evaluating questionnaires submitted by nursing program faculty to discern perceptions of their responsibility to teach critical thinking skills to nursing students required the researcher to be reflexive and unbiased.

The qualitative method of research uses a holistic, inductive approach to explore people or a group of people in a natural setting (Denzin & Lincoln, 2000). Qualitative designs are viewed as naturalistic inquiries; therefore, studies occur in real-world places and situations where the researcher observes a phenomenon without changing the natural routine of events (DePoy & Gitlin, 1998). The naturalistic inquiry emphasizes understanding that can only be received firsthand, in real life observation or interviews with open-ended questions. Naturalistic inquiry provides voice and individuality (DePoy & Gitlin) to those involved, and is a key aspect of exploring nursing program faculty perceptions of their responsibility to teach students critical thinking skills as they bring their world views and life experiences into the classroom.

Rationale for a Phenomenological Study

Phenomenology, as a tradition of qualitative research, allows the researcher to view and examine a phenomenon through the lens of participants' lived experiences. "Understanding the 'lived-experiences' marks phenomenology as a philosophy and as a

method, where the procedure involves studying a small number of subjects through extensive and prolonged engagement to develop patterns and relationships of meaning" (Moustakas, as cited in Creswell, 2003, p. 15). This study of eight nursing program faculty explored the essence of their opinions regarding their lived experience and its impact on their students' critical thinking ability.

Phenomenology is an approach that has been considered "a focus on exploring how human beings make sense of experiences and transform experience into consciousness, both individually and as shared meaning" (Patton, 2002, p. 104). A qualitative researcher using a phenomenological tradition of inquiry focuses primarily on understanding and portraying how people experience a phenomenon according to their realization and views (Patton). Therefore, researchers are intricately involved in the study of the phenomenon and rely heavily on participants' personal thoughts and opinions about their lived experiences (Burns & Grove, 2001). Phenomenology is an appropriate methodology to guide this study because the researcher depended on participants' personal thoughts and opinions of their lived experiences as nursing program faculty members and their perceived responsibility to teach students critical thinking skills.

For the qualitative researcher using phenomenology, there are several guidelines that facilitate the researcher's understanding of a specific phenomenon (Polkinghorne, as cited in Creswell, 1998). The researcher must write research questions that require exploration of meanings and evoke rich descriptions of the participants' lived experience (Creswell). By utilizing the research questions as a basis for inquiry, meaningful data will be collected. Typically data collection for phenomenological studies is gathered using

interviews (Creswell). Data collection for this study used a form of an interview, an open-ended questionnaire administered on the Internet.

Moustakas (1994) proposed that phenomenology is entrenched in questions designed to provide a path to meaning and to present principles that encourage continued investigation of the research subject that support the researcher's passion for the topic being studied. Phenomenological research questions are a product of the researcher's deep interest in a complex subject or dilemma (Moustakas). Bandman and Bandman (1988) illuminated the importance of critical thinking for all professions, but especially the nursing profession. According to Bandman and Bandman, nursing as a profession is in a major state of change; this change includes transforming nursing education from teaching content only from a concrete point of view to teaching students how to doubt, question or examine alternatives to provide safe patient care.

Bandman and Bandman's (1988) suggestion of transforming nurse education teaching methodology further supports O'Banion's (1997) proposal that community colleges transform their institutions from a teaching-centered model to a learning-centered model. The learner-centered institution requires nursing program faculty to modify their teaching strategies from the traditional instructional model where teaching is prescribed, to a partnership type of structure where students and nursing program faculty work together to design a learning environment. The researcher of this phenomenological qualitative study asked questions to passionately discover the opinions of nursing program faculty regarding their responsibility to teach critical thinking skills as workforce demands indicate a growing need for employees to be able to think critically.

Phenomenology is appropriate for this study because phenomenology as a tradition discovers the significance, structure, and essence of the participants' lived experience regarding a phenomenon (Patton, 2002). Since the purpose of this study was to capture and understand the essence of nursing program faculty perceptions regarding the phenomenon of their responsibility to teach students critical thinking skills, phenomenology as a tradition is a suitable approach.

Research Questions

The phenomenological researcher designs research questions that will explore the meaning of participants' experience with the phenomenon as they describe their lived experiences (Creswell 1998). Questions within the research are designed to help the reader better understand the essence of the participants' experience or verify that shared meaning of the experience exists (Creswell).

The overarching question for this research study was:

What are nursing program faculty perceptions regarding their responsibility to teach critical thinking skills to nursing students?

The study included four questions designed to help answer the overarching research question and reveal vivid descriptions of the nursing program faculty member's lived experiences as a facilitator of critical thinking within the student learning process. The questions that guided this study were:

1. How do nursing program faculty in two-year nursing programs define critical thinking within the classroom?
2. How does the definition of critical thinking influence the techniques nursing program faculty use to teach critical thinking skills in the classroom?

3. How well are community college nursing program faculty prepared to teach adult learners critical thinking skills?
4. How is critical thinking assessed in the classroom by two-year nursing program faculty?

The findings of this study will guide and significantly enhance the topics of program development initiatives for community college nursing program faculty. The literature indicates that nursing program faculty who are well trained and practice specific skills designed to create a learner-centered environment are effective instructors whose teaching skills greatly impact student success and retention (O'Banion, 1997).

Method

The purpose of this section of the chapter is to provide direction regarding the research design and rationale for the design selected for this study. The method includes the role of the researcher, sampling, instrument, data collection procedures, and data analysis procedures.

Role of the Researcher

The methods section delineates the role of the researcher as it relates to data collection procedures and analysis techniques. The role of the researcher for this phenomenological qualitative study is critical to the credibility of the study in that qualitative research calls on the researcher to serve as the instrument in conducting the research (Creswell, 1998; Denzin & Lincoln, 2000; Patton, 2002). Hyde and Reid (as cited in Patton) postulated that researcher credibility is durable when the researcher acknowledges his or her potential bias towards the study. Denzin and Lincoln (as cited in Patton) proposed that researchers typically bring predetermined notions and understandings

into the research study. Research partialities are considered influences that may weaken sampling, data collection and interpretation, and reporting. Researcher self-awareness is important to discover biases. The researcher must address issues of subjectivity, objectivity, impartially and neutrality, and must also share this information with all stakeholders. These issues impact research reliability and validity, also known as trustworthiness, an aspect of methodological rigor (Patton).

The researcher's biases related to this study stemmed from several personal negative experiences with instructors from youth to adulthood. In the role of a community college administrator, the researcher was responsible for processing student grievances and complaints. This responsibility further exposes the researcher to negative experiences with nursing program faculty from a student's perspective. However, the researcher's role as a community college administrator may be an asset because the researcher has a good understanding of the language and what nursing program faculty must deal with.

In addition to acknowledging biases, the researcher must also address preconceived notions regarding the possible outcome of the study (Patton, 2002; Schwandt, 2001). The researcher's preconceived notion is that the results of this study will reveal that nursing program faculty believe critical thinking is important in the learning process, but do not perceive it as their responsibility to teach students how to think critically. Having preconceived notions about the findings may damage the credibility of the research because the researcher's viewpoints are evident in the findings of the study (Patton). To maintain credibility of the research, the researcher identified these preconceived notions or biases after reviewing each participant's responses to the questionnaire. The continuous recognition of preconceived notions allowed the researcher to provide "assurances of the fit

between respondents' views of their life ways and the inquirer's reconstruction and representation of the same" (Schwandt, 2001, p. 259).

Creswell (1998) stated that phenomenological qualitative researchers must explain their interaction with the phenomena of their study. As a qualitative researcher employing this approach as a tradition, the researcher relationship with the phenomena of study was explained. Utilizing a Questionnaire Contact Activity Form (Appendix A), the researcher was *reflexive* by questioning personal viewpoints and experiences as issues are presented about each participant's responses.

Reflexivity allows the researcher to critically account for biases, conjectural dispositions, and preferences (Patton, 2002; Schwandt, 2001). Reflexivity occurs prior to interviewing or data collection (Creswell), and also seeks to discover if the researcher is a member of the setting or context in which he or she seeks to understand (Schwandt). The researcher is a member of the setting in which the study was conducted; therefore, the researcher needed to be reflexive in engagement with participants because the researcher seeks to understand the significance and fundamental nature of their lived experience as nursing program faculty members involved in the student learning process. Reflexivity was achieved because the researcher read each participant's response and bracketed personal experiences and biases immediately after reading each response using the Questionnaire Contact Activity Form (Appendix A).

Reflexivity not only alerts the researcher of biases, but also requires the researcher to pay attention to how he or she represents the voice of the participants in a study (Patton, 2002). According to Patton, "voice is more than grammar. A credible, authoritative, authentic, trustworthy voice engages the reader through rich description, thoughtful

sequencing, appropriate use of quotes, and contextual clarity so that the reader joins the inquirer in the search for meaning" (p. 65). Throughout the data analysis and representation process, the researcher used rich, thick metaphors to give voice to participants' responses of their descriptions, direct quotes, and accurate portrayal of phenomena from their lived experience. Metaphors of participant responses displayed energetic and enthusiastic accounts of their lived experience as the researcher grasped each understanding.

As a phenomenological qualitative researcher acknowledges and reveals his or her biases through reflexivity and expresses results by way of voice, the researcher is also challenged to find a way to unite voice and biases to *praxis* (Patton, 2002). *Praxis* is the notion that the researcher explains how his or her personal views can be reflected within the evaluation of the study (Patton), and it is what the researcher does to ensure that knowledge obtained is aligned with the action of the study (Schwandt, 2001). A researcher who employs praxis will accept her or his personal perceptions as well as adequately communicate the perspectives of participants (Patton) throughout the data collection process and the evaluation of the study.

Phenomenological researchers assume "there is an essence or essences to shared experience" (Patton, 2002, p. 106). *Essences* are central meanings of a phenomenon commonly understood by participants who experienced the phenomenon. The researcher identified essences of a phenomenon by bracketing, analyzing, and comparing the experiences of each participant involved in the study, as suggested by Patton (2002) and Moustakas (1994). The researcher was cautious to accurately and carefully provide participants with voice in the interpretation of meaning and their lived experiences with the

phenomenon of study by providing direct quotes of participant responses and describing responses using powerful, profound descriptions.

As a phenomenological qualitative researcher, biases were acknowledged and the researcher was meticulous in the analysis of participants' experiences to ensure that the commonalities of participant responses are sufficiently identified, analyzed, and compared. The researcher maintained a record of biases as they emerged throughout the data collection and analysis process.

This study utilized an Online Open-ended Questionnaire (Appendix B) as a foundation to obtain the scope of nursing program faculty perceptions regarding their role in the student learning process. The researcher-developed questionnaire measured the characteristics of the sample and discovered possible relationships among characteristics (DePoy & Gitlin, 1998). Upon gathering information from the questionnaire, information was reduced to produce understanding and meaning in relation to the research questions that guide this study.

Sample

Sampling is the notion of choosing a group of individuals, experiences or actions to participate in a study (Burns & Grove, 2001). The most important component of phenomenological studies is that all participants must have experienced the phenomenon of study in order for the researcher to gain an understanding of the essence or meaning of the phenomenon from several viewpoints (Creswell, 1998; Patton, 2002). The inspiration behind qualitative research sample selection is to intentionally select participants who can assist the researcher in understanding the phenomenon in question (Creswell, 2003).

There are several types of qualitative sampling methods (Burns & Grove, 2001; Patton, 2002; Schwandt, 2001); however, purposeful sampling is the technique selected for this study. Using purposeful sampling, the researcher sought individuals who are directly related to the phenomenon of study (Schwandt) and, therefore, can provide a deep and insightful understanding of the phenomenon under investigation (Patton).

Although Patton (2002) noted that there are no rules in qualitative inquiry relating to sample size, Creswell (2003) recommends that a strong sample size for phenomenological studies consist of up to 10 participants. Burns and Grove (2001) postulated that "a small sample size may better serve the researcher who is interested in examining a situation in depth from various perspectives" (p. 379).

There are four academic levels of the nursing program at the community college where the study took place and each level increases in complexity. For this study, the researcher sought to include two nursing program faculty members from each of the four academic levels. Since the purpose of this study was to gain a deep and thorough understanding of nursing program faculty perceptions and their meanings as they relate to teaching critical thinking skills, a small sample size of eight participants is appropriate.

This phenomenological qualitative study included eight out of a pool of thirty participants who are full-time community college nursing program faculty who teach nursing courses at one associate-level institution. All participants hold a college degree in the professional area in which they teach. For the purpose of this study, ethnic background and gender were not considered; instead, the study demographics included employment status and years of teaching experience at one designated community college.

Instrument

This study was conducted on the Internet using a secure researcher-developed website. Once participants were identified by the program directors and agreed to participate in the study, they were directed to the researcher website and electronically guided through the participant protocol.

Although several authors proposed various techniques used to collect data (Creswell, 1998, 2005; Patton, 2002), emerging qualitative trends in the data collection process include technology such as email and computer software (Creswell, 2005). Creswell acknowledged web-based data collection processes as popular methods of data collection. As a member of the group involved in this study, the researcher knew some of the participants. Therefore, an Online Open-ended Questionnaire (Appendix B) was appropriate for this study because it allowed distance between the researcher and participants, and increased the integrity of the study by using a website design that prevented the researcher from detecting individual participant responses.

Questionnaires provide a dexterous data collection process and are often more effective than telephone and face-to-face interviews because they can be administered with a high level of confidentiality for matters of a sensitive nature (Patton, 2002). Confidentiality was important to this study because the researcher was an administrator at the institution where the research was conducted; therefore, the online questionnaire encouraged candor and truthfulness in the participants' uncoerced responses. The online, open-ended questionnaire prohibited the researcher from discerning and identifying individual responses by requiring participants to change their identity and log-in password

prior to completing the Online Demographic Data and Participant Log-in (Appendix C) and research questionnaire.

The questionnaire allowed participants to provide lengthy, in-depth responses, and it required participants to answer all research questions prior to electronic submission of their responses. The instrument was accessible from any computer with Internet access, thus allowing participants to complete the questionnaire at a time and place that was convenient for them.

Data Collection and Processing Procedures

The research website included online Research Information (Appendix D) that provided: (a) the name of the researcher and the dissertation topic and title; (b) the purpose of the survey; (c) the estimated duration of time required to complete the questionnaire; (d) the confidentiality safety measures; and, (e) the specification that only voluntary participants were considered.

The website also clearly presented an Online Cover Letter according to recommendations set forth by Barry University's Institutional Research Board (Appendix E). The Online Cover Letter, in general, included the following topics: (a) data collection protocol; (b) areas of importance; (c) how and where the data was shared; and, (d) what risks and benefits were important for participants to know. Participants confirmed their interest in participating in the research project by selecting the yes option on the online confidential website.

After identifying the use of a purposeful sample of eight participants, the data collection and processing procedures were established. Data for qualitative research is frequently collected by way of interviews; but, data can also be collected by observation,

video taping, document review and other methods designed to improve the understanding of humans with commonalities of culture (Denzin & Lincoln, 2000). Data collection for the phenomenological qualitative study of nursing program faculty perceptions regarding their responsibility to teach critical thinking skills to nursing students was conducted using an Online Open-ended Questionnaire (Appendix B) developed by the researcher with assistance from technology experts. Questionnaires as data collection instruments are multipurpose and allow the researcher to explore many different kinds of distinctive qualities of the study (T. Melton, personal communication, May 16, 2005). An online questionnaire is appropriate for this phenomenological qualitative study because questionnaires aspire to obtain honest and truthful responses from participants and secure researcher credibility (Patton, 2002).

In order to recruit participants, the researcher employed the snowball effect (Creswell, 1998). Snowballing is a form of purposeful sampling that identifies participants of the study through individuals who are familiar with people who have experienced the phenomenon (Berg, 2004; Burns & Grove, 2001; Creswell, 2005; Patton, 2002).

The researcher met with nursing program directors at the community college where the study took place. The nursing program directors solicited appropriate nursing program faculty members to participate in the study. The program directors signed a Third Party Confidentiality Form (Appendix F). They received an overview of the study and a manuscript that included procedures and techniques to employ to recruit nursing program faculty participants (Appendix G). This manuscript was helpful in explaining the study to nursing program faculty and encouraging them to participate. To assist the directors in recruiting eight participants, the researcher distributed a Participant Recruitment Flyer

(Appendix H) to all eligible full-time faculty members asking them to contribute to the study. Had the flyer not solicited eight participants, the Director of Nursing (DON) would have sent an email to eligible faculty encouraging them to participate in the study.

To avoid the notion of excessive recruitment for this study, the website was designed to collect only eight responses to the open-ended questionnaire. After eight participants logged in to the researcher website and agreed to participate in the study by selecting yes on the electronic Informed Consent Form (Appendix E), they entered their demographic data and selected a new identity. Once the new identity and password was selected, the participant was directed to and logged-in again using their self-selected username and completed the questionnaire. Nursing program faculty who made inquiries into the study after eight participants responded to the questionnaire received an automated thank you notice alerting them that a sufficient sample size for the study had been reached and were blocked from accessing the study. Once eight participants completed the online, open-ended questionnaire, nursing program directors were notified to discontinue recruiting because the sample size of the study had been achieved.

The program directors provided potential participants with the researcher website address and the initial identification and log-in password that allowed them to access the website (Appendix I). Once the participants selected the critical thinking study, they were directed to the New and Existing Participant Log-in screen (Appendix J). The research website clearly explained the purpose of the research, the questionnaire protocol and participant risks, and researcher methods to safely and confidentially secure their responses. Each potential participant was given a deadline for response in order to take part in the research study. The potential participant reviewed the Online Research Information

screen (Appendix D) explaining the study and the Informed Consent Form (Appendix E) notifying him or her of what was involved in volunteering as a participant in the research study. Once the Online Informed Consent Form (Appendix E) had been electronically agreed to by the prospective participant (by selecting the yes button on the Online Informed Consent form), the participant entered demographic data and created a new identification and log-in password using the Online Demographic Data and Participant Log-in screen (Appendix C). Then, the participants exited the website and logged-in using their newly created identification and password, and followed directions (Appendix J) to the online open-ended questionnaire (Appendix B). The website provided participants the opportunity to submit inquiries confidentially throughout the completion of the questionnaire and to ensure that they fully understood a question that may not have been clear to them. The researcher responded to all inquiries regarding the questionnaire within twelve hours of receiving participant responses and questions.

The online, open-ended questionnaire was designed to generate participants' meaningful thoughts and feelings about nursing program faculty perceptions regarding their role in teaching nursing students critical thinking skills. The process took no more than one hour to complete. Rubin and Rubin (2005) highlighted the value of the researcher asking follow-up questions regarding unexpected responses. The website allowed follow-up communication that was initiated by the participant or the researcher by way of forwarding a communication alert to the participant or researcher to an identified Email address. At the time of the identification and new password activity, the website requested the participant to submit a preferred Email address using the Online Demographic Data and Participant Log-in screen (Appendix C). The participant Email address received instant

messages from the researcher-developed website alerting the participant of the researcher-initiated communication located on the website. Although the participants were made aware of the Email address, the website was designed so that the researcher was blocked from viewing personal Email addresses. Only the webmaster, who was required to complete the Third Party Confidentiality Form (Appendix E), had access to the participants' personal Email addresses.

Once the participant electronically submitted his or her response to the questionnaire, an automatic return response was generated, thanking the nursing program faculty member for participating and notifying him or her that his or her questionnaire responses were received. The researcher also received an Email notification that a participant response had been submitted.

The study exploring nursing program faculty perceptions of their responsibility to teach critical thinking skills to nursing students was conducted at one community college in central Florida. To gain permission to conduct a study of nursing program faculty perceptions at this community college, the researcher met with the Senior Vice-President of Education and Student Services and explained the significance of the study and the procedures for maintaining confidentiality of the findings. The researcher website was also presented. The vice-president was assured that findings will be reported using overall group responses and that the study would not disturb the workday of the nursing program faculty. The researcher obtained approval from the vice president of the designated community college in writing (Appendix L), and submitted the information to the Barry University Institutional Review Board (IRB) for approval prior to beginning the data collection process.

Timeline

Once approval to collect data was received from Barry University's IRB, the researcher asked nursing program directors to refer eligible nursing program faculty who met the criteria of the study to the researcher website, a process that took one week. Nursing program faculty members received guidelines to access the researcher website. If the nursing program faculty member accessed the website, but declined to participate, he or she received an automatic thank you message for his or her time and consideration. Nursing program faculty who decided to participate and who affirmatively acknowledged (by selecting yes on the Online Informed Consent Form) that they understood the research on the information webpage and the consent agreement to participate were redirected to the Demographic Data and Participant Log-in screen (Appendix C).

Participants were then granted two days to complete and submit responses to the twelve-query, online, open-ended questionnaire. On the day that the participant electronically submitted his or her responses to the questionnaire, an automatic message was sent alerting the participant that the questionnaire was received. The researcher also received an Email indicating that an online questionnaire was completed and submitted. The total participant time commitment for this study was two hours—one hour to complete the Online Open-ended Questionnaire and one hour for researcher follow-up to responses and member checking.

If the researcher did not receive completed questionnaire responses from participants within the first forty-eight hours of agreeing to participate and changing their identification and log-in password, the system forwarded an alert thanking the nursing program faculty for his or her willingness to participate and encouraging the faculty

member to finalize his or her agreement to participate by completing and submitting responses to the questionnaire.

The website was designed not only for the participant to submit questions or concerns; it also allowed the researcher to contact participants for follow-up questions or clarification without revealing their identity. The entire time commitment was no more than a total of two hours from the time the participant logged on to review the Online Research Information (Appendix D) and consented to participate through completion of the Online Open-ended Questionnaire (Appendix B) to responding to possible follow-up questions.

Confidentiality is a critical component of research efforts and researcher credibility because it serves to protect the privacy of research participants (Patton, 2002). The ability of the researcher to follow research guidelines and utilize precautions assured confidentiality and privacy of the respondents (Patton, 2002). The researcher provided confidentiality to the greatest extent possible by utilizing a secure website and advice from experts in the field of online questionnaire development and computer website design, and by using the participant-created identification and log-in password. The rationale for the participant-created identification and log-in password was to improve confidentiality and the ability for participant responses to be unidentifiable by the researcher. Participants were made aware that all correspondence between the participant and researcher occurred using the researcher website and the chosen identification and participant-developed log-in password. The web site also provided the feature of mail forwarding to the participants' personal Email address to alert the participant that correspondence from the researcher was available on the researcher-developed website. Although the website was designed by the

researcher, it was maintained by technology experts; therefore, a Third Party Confidential Agreement (Appendix F) for the technology experts was required.

Data will be kept electronically on USB devices and compact discs at the home of the researcher in a locked file cabinet for five years. Results of the research that are made public will refer to group interpretations without disclosing the names of individual participants. Participants are referred to in accordance with their chosen identification (a bird name selected by the participant using a drop-down menu) and participant-developed password. The Informed Consent Form (Appendix E) will be maintained electronically, separate from other research data such as questionnaire responses and participant responses from follow-up interactions. After five years, all data will be destroyed, as recommended by the Barry University IRB.

Data Analysis Procedures

Upon completion of data collection utilizing an online, opened-ended questionnaire, the data were analyzed. Qualitative data analysis is the notion of making sense out of text (Creswell, 1998; Patton, 2002; Schwandt, 2001). Data analysis for phenomenological qualitative research aspires to understand and reveal the meaning, the creation, and the essence of the lived experience of the phenomenon for participants in the study (Moustakas, 1994; Patton; Rubin & Rubin, 2005). In addition to understanding general data, data analysis seeks to answer research questions regarding the study (Burns & Grove, 2001; Creswell, 2005). Qualitative data analysis begins as an inductive detailed study with data of participants' lived experiences, and ends with creating a universal explanation of participants' lived experiences (Creswell, 2005). Tesch (as cited in Creswell) concurred by

postulating that “although the initial analysis consists of subdividing the data, the final goal is to generate a larger, consolidated picture” (p. 23).

Data analysis starts at the beginning and continues throughout the research project (Creswell, 2003; Patton, 2002; Rubin & Rubin, 2005). To analyze data for this study, the researcher employed the responsive interviewing approach proposed by Rubin and Rubin. This approach requires the phenomenological qualitative researcher to describe his or her experiences with the phenomenon; read the text and discover concepts and themes, events and topical markers; examine all interviews seeking to elucidate the meaning of concept and themes; and synthesize the data to develop a comprehensive description (Rubin & Rubin). Refined and integrated concepts and themes are then coded and labeled for easy access and inspection of data referring to similarities of topics or issues.

During the initial phase of the data analysis process, the researcher read each of the participant’s responses and bracketed personal experiences and biases regarding the phenomenon by describing biases and being reflexive of feelings immediately after the first reading of each participant response using the Questionnaire Contact Activity Form (Appendix A). After bracketing biases and noting reflexive thoughts, the researcher continued to engage in numerous readings of participant responses, as numerous readings will allow the researcher to become familiar with the entire collection of responses (Agar, 1980; Creswell, 2003). After several readings of the participant responses by means of constant comparative analysis, the researcher searched for concepts that correspond to the research project by jotting down common words in the margins of each transcribed narrative (Creswell, 1998; Miles & Huberman, 1994). The researcher followed-up with participants by asking questions for clarification in interpretation. Once concepts were

identified and verified by participants, the researcher looked for themes and developed summary statements identifying meaning clusters. Utilizing meaning clusters allowed the researcher to translate a concept describing what happened and how it happened as it relates to research questions and to summarize the concept (Creswell; Ratner, 2002). The researcher described the overall meaning and essence of the participant's lived experience (Creswell). Reviewing participant responses, the researcher looked for events and topical markers that depicted major activities that took place or significant individuals in order to clarify and integrate information necessary to generate new concepts and themes.

Once data was refined and concepts and themes were integrated, a preliminary color coding system was developed to label concepts and themes. These labels became the themes and patterns yet to be catalogued, recognized, and classified. The goal was to capture multiple perceptions and shared meanings by defining as many themes as needed to summarize the constructs within the texts without diluting the content (Rubin & Rubin, 2005).

Qualitative findings are typically presented as narrative dialogue including rich, thick descriptions of written summaries of detailed findings and direct quotes from participants found in the data analysis (Creswell, 2005; Patton, 2002; Rubin & Rubin, 2005). "The phenomenological report ends with the reader having a better understanding of the essential, invariant structure (or essence) of the experience, recognizing that a single unifying meaning of the experience exists" (Creswell, p. 55). Research findings serve as the foundation for shaping new information about the phenomenon and validating support or challenges of the literature review (Creswell, 1998; Patton). The researcher answered research questions by reviewing each participant's response several times, bracketing

personal biases, finding meaning clusters, and recognizing similarities for coding and themes. All responses were combined to address the overarching question and sub-questions of how nursing program faculty perceive their responsibility to teach critical thinking skills.

Quality and Verification

A qualitative researcher must provide evidence of rigor throughout the development of the research study. Rigor requires the researcher to display integrity, competence, and ethics (Tobin & Begley, 2004) while pursuing excellence, discipline, detail, and accuracy in the research project (Ogmen, Krugman, & Fink, 2003). Certain criteria must be met to confirm that a research study was performed employing a rigorous process in order to verify that the research study is valid and reliable to demonstrate trustworthiness (Creswell, 2005; Lincoln & Guba, 1985; Patton, 2002; Tobin & Begley, 2004). Trustworthiness is a term coined by Lincoln and Guba (1985) to describe an alternative set of criteria that should be used to judge quality or goodness of qualitative research (Patton; Schwandt, 2001). Strategies to secure trustworthiness in a qualitative study are credibility, transferability, dependability, and confirmability (Lincoln & Guba).

For trustworthy qualitative research, valid studies must be credible and transferable. Credibility is an internal validity criterion that addresses the research question and represents the effort of the researcher to ensure that the study evaluates what it is intended to evaluate (Creswell, 2003; Patton, 2002; Shenton, 2004). For this research project, the researcher used the following methods to promote credibility: participant relevancy or sampling; respondent validation or member checking; audit trail; and, reflexivity.

According to Schwandt (2002), participant relevancy or sampling is significant to research credibility because it is important to select participants according to their significance to the research project and methodological structure. Another method of considering participant relevancy within a research project is when the researcher has prior knowledge about the community or individual that is abnormal, distinctive or critical for the targeted research. For this research project, the sampling method was purposeful and all participants had experienced the phenomenon of study, which greatly contributed to the research project. In addition, the researcher was a member of the population under study and had prior knowledge of the phenomenon that greatly enhanced credibility of the research project.

Respondent validation (member checking) takes place when participants review data collected and analyzed, and agree or disagree with the findings (Miles & Huberman, 1994; Robinson, 2003). The participant responses to data analysis confirm or disconfirm the researcher's conclusions and become a part of the research findings (Robinson). For this study, using an online, open-ended questionnaire, respondent validation occurred using a secure website on the Internet. The participant received an Email initiated from the website alerting him or her that he or she had a message on the website. Using a confidential log-in identification and password developed by the participant and unknown to the researcher, the participant logged-on to the website, reviewed the data analysis, and submitted his or her opinions of the researcher's findings.

The audit trail helps establish the credibility of qualitative studies in regard to details of data collection and the data analysis process. Researchers depend on the utilization of data to produce findings. The audit trail provides documentary evidence for

neutral experts or peer reviewers with expertise to review and verify the path the investigator followed from raw textual data results (Robinson, 2003). Along the audit trail, data must be clearly described in detail for the reader (Drisko, 1997). The utilization of direct quotes from participants and rich, thick descriptions to accurately portray the experiences of participants as they interact within their world and construct meaning lends itself to credible research (Creswell, 1998; Miles & Huberman, 1994; Patton, 2002).

Reflexivity as a methodology to validate trustworthiness is the notion of the researcher seriously acknowledging biases, speculative outlook, preferences, and other idiosyncrasies about the study. Reflexivity can make clear the activity of the audit trail (Johnson & Waterfield, 2004). The credibility of the researcher and findings are reinforced when the researcher acknowledges his or her potential bias towards the study (Creswell, 2003; Patton, 2002; Reid, 1994). In this study, the researcher bracketed biases and noted reflexive thoughts immediately after the first reading of each participant's response using a Questionnaire Contact Activity Form (Appendix A).

In addition to credibility, a research project must also be transferable for it to be judged a valid study (Schwandt, 2001). Transferability is external validity in qualitative research, and relates to the ability of the results to be generalized and used beyond the specific framework in which the study was conducted (Patton, 2002; Schwandt; Tobin & Begley, 2004). By providing rich thick descriptions, participants' direct quotes, and full demographics, the reader can determine the transferability of the study (Creswell 1998). Detailed descriptions about the study allow the reader to engage in the project and consider if the research findings apply to other cases with comparable characteristics and conditions (Creswell; Drisko, 1997).

Trustworthy qualitative studies must also be reliable. Reliability is the notion of the study being duplicated by another researcher (Schwandt, 2001). Reliable qualitative studies must be dependable and confirmable. Dependability is a process that is accomplished through auditing. Readers are judging whether the process of the research is reasonable, traceable and well documented (Schwandt). Dependability for this research was realized by the researcher's efforts of corroborating data and challenging interpretive theory. Dependability in qualitative research requires the researcher to provide descriptive and colorful examples or extensive data so the reader can develop his or her own opinions, measure the suitability of coding, comprehend the data analysis, and support research conclusions (Creswell, 1998; Drisko, 1997; Patton, 2002). The researcher provided details of the process of the research in the final report as well as demographics and rich descriptions of the participants' lived experiences.

For a qualitative study to be reliable, it must also be confirmable. Confirmability ensures that participant responses and the researcher's interpretation of data were authentic and not fabricated (Drisko, 1997; Schwandt, 2001; Talbot, 1995). Confirmability criteria require data to correlate with research affirmations, conclusions, and explanations, and guarantees that the data support the results and recommendations of the study and the agreement with the inquirer and the facts (Talbot). The use of an external auditor is an excellent technique for establishing that the research study is confirmable (Schwandt). Therefore, the researcher used an expert external auditor who has no connection to the study, but is proficient in the field of study. An external auditor reviews the study in detail and asks the researcher question's regarding all aspects of the study (Creswell, 2005; Schwandt) to verify the study was performed correctly and is consistent with the

philosophy and purpose of the study. For the study exploring nursing program faculty perceptions of their responsibility to teach critical thinking skills, confirmability was achieved using the chair of the dissertation committee and committee members. The dissertation committee was considered the external auditor because committee members are regarded as experts in the field and can verify confirmability.

This study met the standards for quality and verification recommended by experts in the field of qualitative research. Guba and Lincoln (1985) are notable qualitative researchers who suggested an alternative for qualitative studies to authenticate rigor: trustworthiness. Trustworthiness provides clear and concise strategies to identify and enhance validity and reliability for the qualitative researcher. This study used trustworthiness to achieve quality and verification of the research project through the aforementioned four criteria: credibility, transferability, dependability, and confirmability.

Ethical Considerations

Ethical research practices begin when the researcher identifies the topic of study and continues through publication of study findings (Burns & Grove, 2001; Creswell, 2003). All ethical research must include the effort to protect the rights of human participants, balance benefits and risks of participants in the study, obtain an agreed upon consent form from each participant, and meet the guidelines of the Institutional Review Board at the researcher's institution of higher learning (Berg, 2004; Burns & Grove).

Ethical researchers should develop a relationship of trust with participants (Patton, 2002). As an ethical researcher, participant trust was achieved by protecting their rights through the acknowledgment of respect of persons and the right to privacy and confidentiality (Burns & Grove, 2001; Schwandt, 2001).

To show respect of persons, the researcher treated individuals separately by informing them of the study and allowing them to voluntarily decide if they would like to participate. Respect of persons as an ethical issue also requires the researcher to allow participants to leave the study without consequences (Burns & Grove, 2001; Creswell, 2003; Rubin & Rubin, 2005), and participants were notified of their right to withdraw from the study at any time.

The right to privacy and confidentiality requires the ethical researcher to consider what, how, and when participant information can be shared (Burns & Grove, 2001). As an ethical researcher, the researcher for this study followed the Privacy Act of 1974 by clearly illuminating in the Informed Consent Form (Appendix E) that private responses from participants and data collected will be kept confidential and not made public without the participant's written approval. The researcher protected participants' confidentiality by inhibiting the researcher's ability to link responses to individual participants through the use of a secure researcher-developed website that required participants to change their identities and log-in passwords after agreeing to the terms of the Informed Consent Form. The researcher also required the technology expert who maintained the researcher-developed website to sign a Third Party Confidentiality Agreement (Appendix F).

Researchers are to inspect and balance the possible benefits and risks for participants while involved in a study by considering the possible outcomes of the study (Burns & Grove, 2001). The benefits of this study are the notion of generating knowledge to increase understanding of how nursing program faculty perceive their responsibility to teach critical thinking skills as stated on the Informed Consent Form (Appendix E). Assessing risks that participants could experience is significant for an ethical researcher

(Burns & Grove). Burns and Grove proposed that risks associated with research are wide-ranging, from no risks at all to severe risks. Participants were recruited by program directors using the Nursing Faculty Recruitment Manuscript (Appendix G) and the Participant Recruitment Flyer (Appendix H). For this study, there were no known or anticipated risks for participants involved because the study is specifically designed with minimal risk of any response(s) being attributable to any one person. This study was conducted using a secure website designed exclusively for this particular research project. The website was also designed to inhibit the researcher from linking participant responses to any one individual. This was an excellent means to protect participants.

The Informed Consent Form (Appendix E) requires the researcher to disclose specific information about the study to each potential participant, as mandated by the National Research Act of 1974 (Berg, 2004). Regarding informed consent, Denzin and Lincoln (2003) expressed the importance for potential participants to volunteer to partake in the study based on accurate and detailed information. Using Barry University's Institutional Review Board (IRB) Consent Form Checklist and the Sample Informed Consent Form, the researcher met the IRB protocol as well as informed participants of critical information regarding their involvement in the research study. To obtain an informed consent agreement from participants in this study, the researcher used a secure researcher-developed website that required potential participants to agree to the conditions listed on the Informed Consent Form by selecting yes from the drop-down option on the Online Open-ended Questionnaire. If the nursing program faculty member decided not to participate, the individual selected the no drop-down option. Individuals who selected not

to participate in the study received an automatic thank-you message and were blocked from further access to the questionnaire.

The National Research Act of 1974 requires all research involving human participants to be examined by an Institutional Review Board (IRB). Institutional Review Boards examine and approve research and protect participants' rights, ensure participant safety, and protect individuals from harm (Berg, 2004; Creswell, 2005; Denzin & Lincoln, 2003; Patton, 2002). As a doctoral student at Barry University, the researcher met the requirements of the IRB, first by completing the online Human Participants Protection Education for Research Teams course. The researcher then followed the protocol of the IRB as outlined on the Barry University website. In accordance with the requirements of the Barry University IRB, data will be stored in a locked file cabinet in the home of the researcher for five years. Participant Informed Consent Information and responses will be kept separately. All data will be destroyed after five years.

Chapter Summary

This qualitative research study was designed to explore the factors that contribute to faculty perceptions regarding their responsibility to teach students critical thinking skills. The philosophical framework for this study concentrated on the phenomenological viewpoint. Phenomenologists seek to understand the essence of what individuals experience and how they experience the phenomenon according to their lived experiences.

Phenomenology is the best qualitative tradition of inquiry for this study since it seeks to understand and portray how people experience a phenomenon according to their understanding and views. Participants for this study were eight purposively selected community college nursing and allied health nursing program faculty.

Data were collected utilizing an online open-ended questionnaire accessed through a secure researcher-developed website. Employing purposeful criterion sampling, participants were recruited by program directors using the snowball effect and a researched-disseminated flyer. Using a predetermined script, program directors referred nursing program faculty to the secure researcher-developed website to read and agree to the electronic Informed Consent Form by selecting yes at the bottom of the form. Once the participant agreed to the conditions listed on the Informed Consent Form, he or she was instructed to complete demographic data and create a new identification and log-in password. Once the participant created a new identification, he or she was directed to log-in again. Using a newly created identification and log-in password, the participant gained access to the online open-ended questionnaire. The website was designed to alert participants and the researcher of communication initiated on the website by automatically forwarding a confidential email. This allowed the participant and researcher to communicate and answer follow-up questions or concerns.

Data analysis included bracketing the researcher's description of experiences with the phenomenon. The researcher engaged in numerous readings of the text to discover concepts and themes, events, and topical markers. After examining all responses from the open-ended questionnaire, the researcher sought to reveal the meaning of concepts and themes. The researcher synthesized the data to develop an all-inclusive description of the participants' responses.

As a phenomenological qualitative researcher, the researcher employed methods of rigor that yielded valid and reliable data. To ensure rigor, rich, thick narratives to describe participants' lived experience were used. After the first reading of each participant

response, the researcher recorded her biases. The researcher also used member checking to validate findings with participants to ensure the exactness of interpretations. The researcher utilized an auditor to review the research and validate integrity.

Safety measures were exercised throughout the research process to protect participants' identity and privacy. Using the Informed Consent Form, the researcher thoroughly explained the ramifications of the study and the potential risks and benefits of participant involvement in the study. The disk containing participant responses and demographic information is being kept separately from transcripts in a locked file cabinet at the researcher's home. All research data will be destroyed after a period of five years, as required by the Institutional Review Board at Barry University.

CHAPTER IV

RESULTS OF THE STUDY

Introduction

The goal of this qualitative study was to explore the perceptions, beliefs and opinions of full-time nursing program faculty about their responsibility to teach critical thinking skills to nursing students. On the subject of critical thinking, the literature provided a wealth of information specific to the definitions, the need for nurses to learn how to think critically, student resistance to developing strong reasoning skills, faculty resistance to teaching critical thinking, and assessment methods. Several studies (Banning, 2006; Brown & Keeley, 2001; Halpern, 2002; Haix & Reybold, 2005; Simpson & Courtney, 2002; Yeh, 2002) reference the relationship between critical thinking and effective nursing; however, few, if any, studies address community college nursing program faculty and critical thinking.

A phenomenological approach was used to obtain a deeper understanding of issues, faculty beliefs, and opinions regarding their experiences with and exposure to critical thinking concepts and techniques used to teach and assess critical thinking skills. The results of this qualitative study are reviewed in this chapter and include: (a) demographic data of eight full-time, community college, nursing program faculty; (b) the data analysis and coding process; (c) answers to the research questions; and, (d) a summary of the findings.

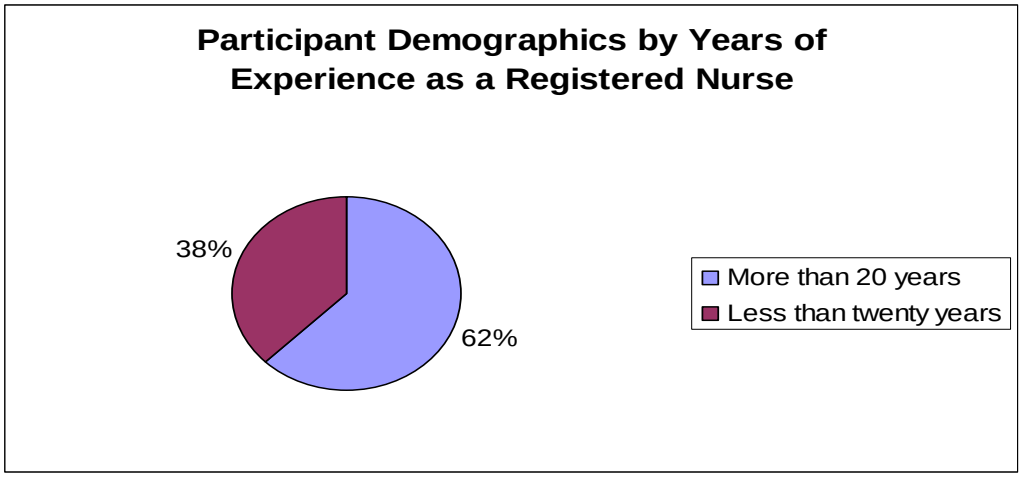
Demographics of Participants

The demographic data relevant to the eight full-time, nursing program faculty participating in the study were obtained utilizing the Online Demographic Data and Participant Log-in Form (Appendix C) located on a secure researcher-developed website. The website provided participants with eight bird names to choose from as identifiers. The bird names were Pelican, Nene, Cardinal, Seagull, Robin, Mockingbird, Finch, and Bluebird. The presentation of the demographic data incorporated the following five areas: (a) years of experience as a nursing professional; (b) years of experience as a full-time faculty member; (c) participant age range; (d) level of education; and, (e) current teaching level of the nursing program. Ethnicity and gender were not considered in this study because much of the literature on faculty teaching students to think critically does not include these categories (Elder, personal communication, August 28, 2006). Also, there is limited diversity of faculty in the nursing program at this institution; therefore, obtaining gender and ethnicity information would decrease the level of participant anonymity and confidentiality of participant responses.

Years of Experience as a Nursing Professional

Of the eight nursing program faculty who participated, five participants (62%) had more than 20 years of experience as a registered nurse. The remaining three (38%) had fewer than 20 years of nursing experience. Participant years of experience is illustrated in Figure 4.1.

Figure 4.1 Years of Experience as a Nursing Professional

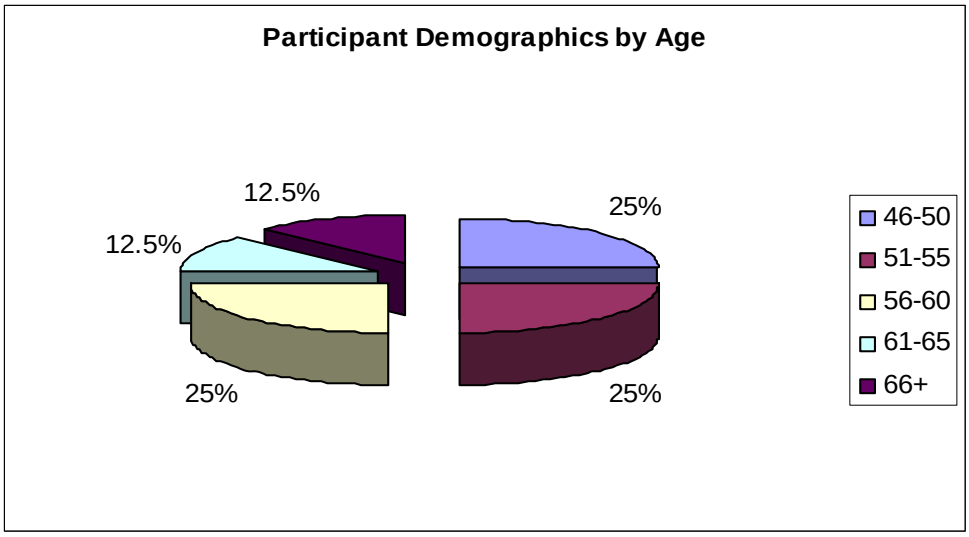


Participant Age

Participant age was collected using an age range instead of exact age. This strategy was employed to further protect the identity of the participants and enhance anonymity because the researcher is a member of the group under study.

The majority (75%) of the full-time, nursing program faculty members who participated in this study were over age 50. Specifically, two participants (25%) were between the ages of 46 and 50; two (25%) were between the ages of 51 and 55; two (25%) were between the ages of 56 and 60; one (12.5%) was between the ages of 61 and 65; and the last (12.5%) was over age 66. See Figure 4.2 for participant demographics by age.

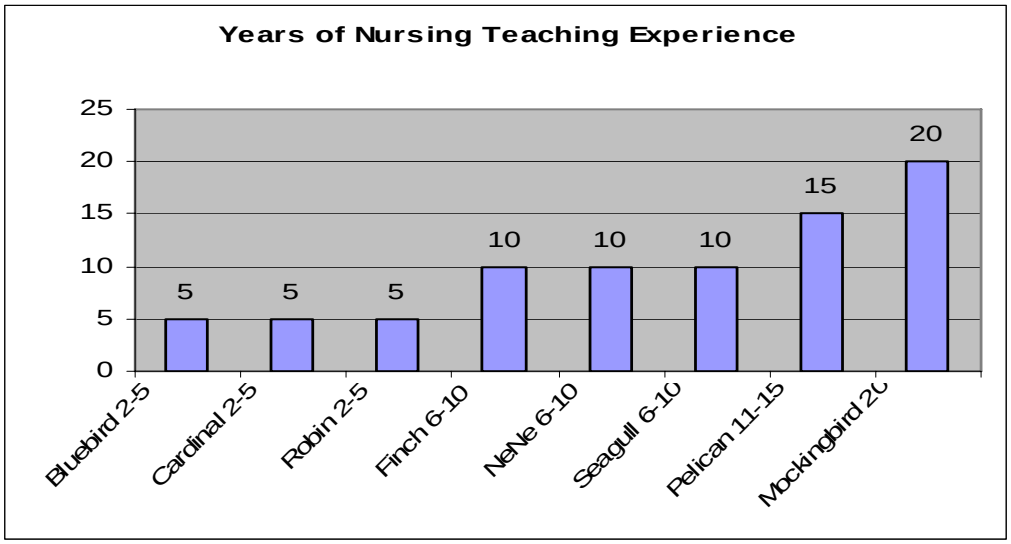
Figure 4.2 Participant Demographics by Age



Years of Teaching Experience

The majority (75%) of the participants in this study had less than 10 years of experience as community college, nursing program faculty; specifically, only one participant (12.5%) had more than 20 years of teaching experience, while a second participant (12.5%) had between 11 and 15 years. For the remainder, three faculty members (37%) were in the range of six to 10 years of teaching experience and three (37%) had less than six years experience. Participant years of experience is illustrated in figure 4.3.

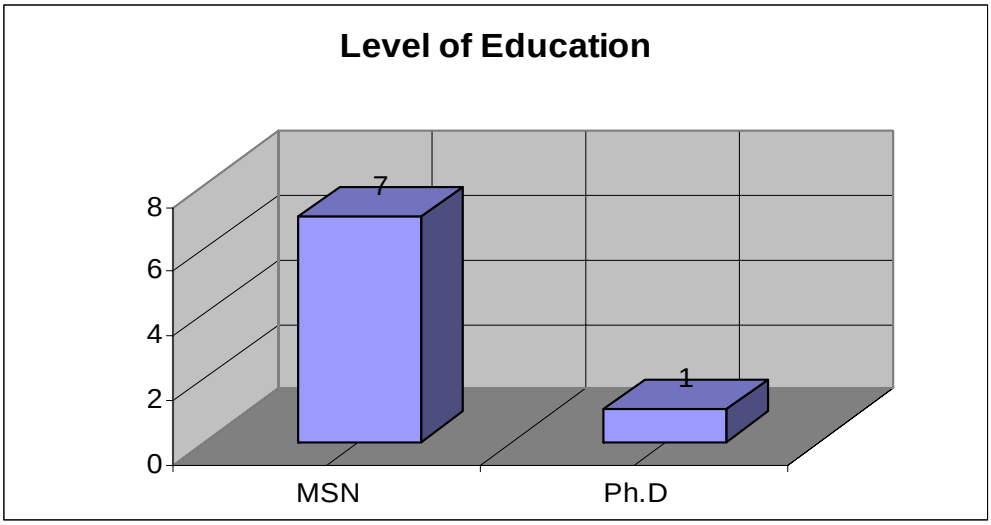
Figure 4.3 Years of Nursing Program Teaching Experience



Level of Education

Higher education institutions require faculty to meet specific eligibility criteria to teach college courses. Criteria vary according to discipline, degree level, and accreditation standards. Full-time nursing instructors at this institution must be registered nurses with at least a master's degree and 18 graduate-level credit hours in nursing. One-hundred percent (100%) of the participants met the credentialing standards set forth by the nursing program and accrediting agencies. One participant had a doctoral degree and the remainder held at least a master's degree in nursing (See figure 4.4).

Figure 4.4 Level of Education



Data Analysis and Coding Process

This section explains the data analysis process as well as specific information regarding coding procedures utilized for this study. Because this study was conducted via a secure researcher-developed website, data were electronically transcribed upon the participant's completion of the online, open-ended questionnaire. The researcher-developed website provided various options for sorting information. First, data were categorized according to individual participants by bird name in order to understand and explore personal opinions. Following this, the data were sorted in the order of participant responses to the online, open-ended questionnaire so as to gain an understanding of participant beliefs and opinions as a group. These classification features were instrumental in the researcher's ability to view data from various perspectives.

Using the Questionnaire Contact Activity Form (Appendix A) during the initial phase, the researcher composed descriptive notes and reflexive feelings after the first reading of each participant's response. After bracketing biases and reflexive feelings to validate trustworthiness of the process and develop an audit trail, the researcher continued

to read individual participant's response numerous times to gain a deep understanding of what each participant was expressing. After several readings of the data, the researcher summarized each participant's response and emailed her interpretations separately to each member of the study via the secure researcher website. After participants validated the researcher's interpretation of their responses to the online open-ended questionnaire, the researcher began the constant comparative analysis by reading individual transcripts and comparing them in order to search for concepts. The researcher noted commonalities in the margins of the transcripts. After completing the constant comparative analysis, the researcher began exploring themes and meaning clusters by viewing the data by questions instead of by individuals. Using the responsive interviewing analysis process of Rubin and Rubin (2005), the researcher began to prepare the data to discover concepts, themes, events, and topical markers.

Using a preliminary color coding system, the researcher discovered and labeled concepts and themes. This color coding system was developed using colored markers within the margin of the text to label each participant's comments relative to the identified themes. To capture various opinions and shared meanings, many themes were sought to summarize constructs without diluting content (Rubin & Rubin, 2005).

Responses to the Research Questions

This step of the data analysis process captured the opinions and perceptions of full-time nursing program faculty related to the 12 research questions in the Online Open-ended Questionnaire (OOQ). Participants were identified by bird names. The eight bird names were: Bluebird, Cardinal, Finch, Mockingbird, Pelican, Nene, Robin, and Seagull. In response to the overarching question and corresponding research questions, emerging

themes were revealed and explained by using rich, thick descriptions and direct quotes from participants. These themes are illustrated in the responses to each research question and elucidate the lived experiences of full-time nursing program faculty at one community college in Florida regarding their perceived role to teach critical thinking skills to nursing students.

In order to facilitate meaningful discussion, the following research questions were developed to address the investigation of faculty perceptions regarding their responsibility to teach critical thinking skills to nursing students:

$R_{1:}$ How do nursing program faculty in two-year nursing programs define critical thinking within the classroom?

$R_{2:}$ How does the definition of critical thinking influence the techniques nursing program faculty use to teach critical thinking skills in the classroom?

$R_{3:}$ How well are community college nursing program faculty prepared to teach adult learners critical thinking skills?

$R_{4:}$ How is critical thinking assessed in the classroom by two-year nursing program faculty?

Findings will be presented in the order of these research questions in the following section.

Critical Thinking Defined

The first research question addresses the definition of critical thinking from the participants' perspectives. Question one from the Online Open-ended Questionnaire (OOQ) asked participants to provide their username (e.g., a bird name). Questions two and

three on the OOQ requested participants to explain and define the components of critical thinking.

The majority (62%) of participants considered critical thinking to be a process or method–an indicator that critical thinking is not learned in merely one setting but must be developed in order for one to progress from a novice to expert thinker. This is illustrated by participants' comments. For instance, Mockingbird, the one full-time faculty member with a doctorate and more than 20 years experience in the nursing profession, provided an in-depth description and explanation of critical thinking. Mockingbird has also attended several critical thinking workshops, including a detailed, week-long training by Richard Paul (the author of the theoretical framework for this study). Mockingbird is referred to in this study as an expert participant (one who fully understands what critical thinking is according to the theoretical framework). Mockingbird stated, "Critical thinking is an intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, or evaluating information." On the other hand, only a few (38%) of the participants described critical thinking as an ability or disposition. As noted by Seagull, a middle-aged, full-time faculty member who has a master's degree, more than 20 years of experience in the nursing profession, and between six and 10 years of teaching, "It's [critical thinking] the ability to anticipate what happens before it happens." This definition of critical thinking, as described by Seagull, conflicts with the definition and understanding of other participants and suggests that critical thinking may not be a process.

Many of the participants (63%) defined critical thinking with the nursing process in mind. Cardinal, a full-time faculty member who has a master's degree with more than 20 years of experience in the nursing profession and less than five years of teaching

experience, asserted, “Critical thinking is a method to prioritize nursing care. Critical thinking involves a complex process to weigh appropriate options, solve problems, prioritize patient care, and make decisions.” Finch, a full-time faculty member who holds a master’s degree and has more than 20 years experience in the nursing profession and less than five years of teaching experience, explained the process of critical thinking as a way of discovering the answers to the main issue at hand. Finch explained that “critical thinking is a method to prioritize nursing care, solve problems and reach competent decisions.” One participant, Nene, viewed critical thinking as a continuous process that exceeds the experiences within the nursing program, a finding which suggests that nurses gain critical thinking skills during and after the nursing education program. Nene holds a master’s degree and is a full-time faculty member who has between six and 10 years of experience in the nursing profession and as an instructor. Nene indicated that “critical thinking skills continue to improve as the nurse gains nursing experiences.” The design of the Richard Paul Model (RPM) for Critical Thinking supports the viewpoint that critical thinking is developed over time as a process, and as an individual progresses through the eight-steps of the model his or her critical thinking skills mature and improve.

While comparing participant responses, a theme emerged regarding faculty definitions of critical thinking and its relationship to problem-solving. Faculty described problem-solving as synonymous with critical thinking. Six out of eight participants (75%) indicated in their definitions of critical thinking that problem-solving serves as the reason for employing critical thinking skills. This is exemplified by participant statements. Pelican, a full-time faculty member with a master’s degree and more than 20 years of experience in the nursing profession, as well as between 11 and 15 years teaching

experience, explained that critical thinking is indeed a problem-solving technique used to enhance clinical judgment. Pelican defined critical thinking as “analyzing a series of problems.” Mockingbird reaffirmed comments made by Pelican, stating that “nurses will use this information to solve problems, and make sound clinical judgments and decisions.” Seagull, suggested ideas regarding critical thinking that were quite similar to those of Pelican and Mockingbird, including the notion that the information nurses use to problem-solve might be incomplete or inadequate. Seagull considered critical thinking to be “the ability to take limited information and infer from that information what the real problem might be.” Finch defined critical thinking as “a problem solving method used to make nursing care decisions and prioritize patient care.” Robin expressed that critical thinking as being equal to critical thinking by stating that critical thinking was “formerly known as the scientific method of problem-solving from the 1960’s.” Robin is a middle-aged, full-time faculty member who has a master’s degree and between two and six years of experience in the nursing profession and as a nursing program instructor. Robin teaches students enrolled in the fourth and final semester (level IV) of the two-year nursing program.

In seeking participants’ definitions of critical thinking, OOQ #3 asked participants to describe the components of critical thinking from their perspectives. Participants provided more than 60 duplicated components of critical thinking as they perceive them. The most frequently conveyed components were: knowledge, experience, evaluation/assessment, making suppositions, assumptions, and decision-making. This is illustrated by Bluebird, a middle aged, full-time faculty member who has more than 20 years experience in the nursing profession and less than six years of teaching experience. Bluebird holds a master’s degree in nursing and teaches students enrolled in the second

semester (level II) of the two-year nursing program. Bluebird exemplified participant metaphors by describing the components of critical thinking as:

> Learned or acquired knowledge of the factual information appropriate to the situation, sufficient experience or practice with the process of superimposing factual information onto a situation with several possible courses of action, weighing and making suppositions about possible outcomes when differing responses to the situation are applied, choosing the best possible course of action from the scenarios and applying it and evaluating the results of that action.

Bluebird essentially represented participants in their descriptions of the components of critical thinking.

Critical Thinking Teaching Techniques

The second research question addressed how the definition of critical thinking, as reported by the participants, impacts their methods of teaching the concept. Questions seven, eight, and nine from the OOQ asked participants to share activities used to improve student critical thinking, describe techniques employed to teach students how to think critically, and to elaborate on the daily design of pedagogical techniques used in the classroom.

Participant responses showed that faculty have a good attitude toward teaching critical thinking. Geersten (2003) posited that faculty attitudes toward critical thinking significantly impact student knowledge acquisition and the ability to improve reasoning skills. Question seven of the OOQ asked faculty to explain how they ensure that students improve their ability to think critically in their classroom. Faculty mentioned several methods used in the classroom to help students gain good critical thinking skills – from

lectures, case studies, and care plans to questioning, unit tests, and clinicals. Teaching content through lectures and questioning students were the most frequently stated methods faculty used to make certain students improve their critical thinking ability. These methods coincide with faculty perceptions of how they themselves were taught to think critically while in nursing school.

A theme emerged from participant responses to question seven regarding how they ensure that students improve their critical thinking ability. Participants indicated two approaches used to teach critical thinking. Participants were either confident or anxious in their ability to help students improve their ability to think critically. Three participants (37%) displayed confidence in their ability to teach critical thinking. This is exhibited by Cardinal's positive response asserting that:

> In Level I, nursing students take a critical thinking ATI [a baseline ability assessment to help improve pass rates on the nursing licensing exam]. This ATI is a baseline assessment, and the student and instructor discuss the results of the baseline ATI. Level I students are learning to use critical thinking and the nursing process to prioritize client care needs. Critical thinking can be assessed throughout the semester as students learn nursing process. Feedback provided by the instructor on clinical preps, the holistic nursing care plan, and online discussions/drop box assignments, and during group discussions/case studies facilitates student learning and improved critical thinking.

Mockingbird was also confident and specifically described, step-by-step, the processes used in class to help students learn to think critically. Confidence is an important attribute

for faculty members to have in order to encourage knowledge acquisition for students (Haas & Keeley, 1998).

Although three of the eight (37%) participants in this study were confident in their ability to help students improve their thinking skills, five (63%) exhibited anxiety and concern regarding their ability to teach students to think logically. These participants not only expressed anxiety regarding their ability to teach, but were also skeptical of the students' ability to learn how to think critically, a notion that was demonstrated in the literature review. Pelican articulated concern and cautiously stated:

> I do not know that I can ensure – but I do try to promote – reason is some students are not engaged or are shy. A few students have also indicated that in the big theory group (36 students) they were ridiculed for asking what a few considered "dumb" questions. I plan to use the "ask it basket" more to try and avoid that.

The notion of students lacking confidence in asking questions in class parallels the literature. According to Tsui (2002), students tend not to participate in classroom conversation because they compare themselves to others. For this reason, the development of a cooperative environment is important to foster student engagement and participation.

Question eight of the OOQ asked participants to explain what teaching techniques they use to instruct students in how to think critically within the classroom. Again, faculty provided several techniques such as lectures, case studies, mind mapping, commercial programs, and the holistic nursing care plan. Although faculty shared the techniques they use to teach students to think critically, they did not explain specifically what the techniques were or how frequently they were employed. Unlike the majority of the participants, Nene provided a unique technique that no one else expressed: reflection.

Reflection is a learning concept that was described by Dewey as an inquiry process. Nurses use reflection as a means of problem-solving (Lowenstein & Bradshaw, 2001). It is structured problem-solving where the results are obvious and set – which is not always the case in nursing care assessment or critical thinking.

Question nine of the OOQ asked participants to describe what a typical day in the classroom is like. This question was aimed at closing the loop on understanding participants' teaching methodology by providing a synopsis of how students experience critical thinking training. Most participants presented a vivid picture of the activities that occur during a typical day within the classroom. Faculty explained that the program level and the curriculum direct the goals of the day. Four activities that occur on a regular basis as described by all (100%) participants were lecture, question/answer sessions, student-led group activities, and case studies. Although vivid, a few participants (37.5%) indicated hesitation in their descriptions by using words, like "maybe," "might," and "perhaps" when explaining what might occur during their daily routine. This exemplification of uncertainty indicates that a daily routine either does not exist or they posses a sense of discomfort in explaining what a typical day is like. For example, Bluebird pointed out:

> Students may begin with a quick "in the door" quiz over the reading material assigned for that session. There may then be a quick question and answer session to clarify any confusing material. Then they may go to the computer lab for computer assisted learning. They may return to the classroom and either see a movie that details a difficult aspect of that skills lab, there is usually more of an emphasis on student-led activities. There may be an ER episode, or a case study, or hands-on activities that correspond to the morning session.

Faculty Preparation to Teach Critical Thinking

The third research question of this study addressed faculty's exposure to critical thinking and their preparation to teach critical thinking. Questions four, five and six on the OOQ asked participants to explain how they were taught to think critically as nursing students, what type of training they received as faculty members to teach critical thinking skills, and how they themselves modeled critical thinking on a daily basis within the classroom.

The literature review discussed how important it is for faculty to understand critical thinking concepts in order to effectively teach students to apply those skills (Bissell & Lemons, 2006; Haix & Reybold, 2005; Morgan, 1995; Paul as cited in McMahon, 2005). Participants responded to the OOQ #4 regarding how they themselves were taught to think critically as nursing students. Most participants (62%) acknowledged that they were taught critical thinking skills to some extent in nursing school, while thirty-eight percent (38%) indicated that the critical thinking training they received came about through graduate school, faculty development programs or national conferences. The majority of the participants who acknowledged that they received critical thinking training while in nursing school described the training as learning how to improve problem-solving skills via lecture, rote memorization, teacher-driven pedagogy, and quizzes/tests. Bluebird commented that critical thinking was taught "largely by in-class quizzing and discussions that were teacher-driven." Teacher-centered pedagogy is heavily noted in the literature as the most popular method of teaching, which confirms that students are more familiar with this type of instruction (Boris & Hall, 2005). Pelican further described how he/she learned to think critically using different terminology. Pelican said, "The term (critical thinking)

was not used – I studied nursing in the 60's and the buzz words then were problem solving."

Two faculty responses differed from the others. The first was from Seagull who had a different view about his or her experience in nursing school and asserted, "I don't remember being taught 'critical thinking' as a student. But I was taught to 'think like a nurse.' It's probably the same thing, but I really don't remember learning it." The second respondent, Nene, alluded to confusion regarding the subject and indicated that nursing care plans (detailed descriptions outlining a plan of action when caring for a patient) provide critical thinking education during nursing school.

The responses indicated that associate degree nursing program faculty members were subjected to various educational experiences throughout their academic pursuits. These encounters were illustrated when only three faculty, Robin, Finch and Cardinal, explained that their experience with critical thinking included problem-solving instruction using the scientific method. Finch explained that critical thinking was taught during graduate education in the clinical environment – indicating that he/she did not receive any critical thinking training during initial nursing program education. The other three participants, Bluebird, Pelican and Mockingbird described their experiences with critical thinking as occurring through numerous lectures and teacher-centered pedagogy.

As a whole, participants indicated that they received various levels and types of critical thinking training during their academic training as nursing program students. Full-time nursing program faculty can also develop their skills in critical thinking through faculty development initiatives that are provided by the college. Therefore, question five on the OOQ asked participants to explain the types of faculty development training was

provided by the college to teach them how to educate students to think critically. Community colleges provide faculty development training programs to improve teaching techniques, student engagement, and other academic enhancement initiatives. Faculty development enhancements can also be attained by attending and participating in local, state and national conferences and workshops. Five of the eight participants (62%) acknowledged that they received some sort of pedagogical training through staff development initiatives. Only two of the five (31.5%) participants who acknowledged that they received staff development training described their training to be specifically for teaching critical thinking; all others described training as nursing workshops and new faculty orientation. This indicates that perhaps less than 75% may have actually received training to teach critical thinking skills to nursing students.

Mockingbird, a veteran faculty member with more than 20 years teaching experience, provided the most confident detailed description of his/her faculty training regarding critical thinking:

> I have attended several workshops and conferences on critical thinking. For example, I have attended the conference on critical thinking at Sonoma State University in California. This is the Richard Paul Conference. I have also attended a 40 hour workshop at USF on critical thinking that was offered through the Department of Education. At SPC, we had a workshop by Dr. Eisen on Teaching for Critical Thinking last spring. Likewise, in 2002, we had a nurse expert speaker come in to talk about innovative activities and ways to stimulate critical thinking in the classroom.

In the description of faculty development training received, Pelican stated, “We received three books from the critical thinking institute. I have read all three and have used some of the techniques in the classroom and clinical area.” Robin was not specific in his/her description, but illustrated that faculty development training occurred through “new faculty orientation and staff development day.” Three of the eight participants (37%) reported that they received no critical thinking training at all through their staff development programs.

Faculty who did not receive critical thinking training through staff development initiatives expressed frustration regarding the lack of training received to teach critical thinking. This is exemplified by Bluebird, a faculty with less than five years teaching experience, who stated:

> It [critical thinking] is a skill we have had to learn flying by the seat of our pants. I think that the biggest problem with teaching anything to nursing students is that nursing instructors are largely practitioners who have a love for nursing and hopefully a love for students, but don’t have any real background in teaching. The prevailing belief in nursing education seems to be that anyone with an advanced degree in nursing can learn to teach. It’s just not that simple. Becoming a good, effective teacher is not something that will automatically happen through on-the-job training. Even if you are lucky enough to evolve in that fashion, there are a lot of students who become your guinea pigs as you learn who actually deserve better than that. I think that nursing is on the right track in emphasizing critical thinking, but I think that things would be much better if the process was applied by nurses to training faculty first.

Bluebird went on to express a sincere need for faculty mentoring, where experienced faculty members work closely with new faculty to assist them in gaining teaching skills. Bluebird expressed a feeling of hopelessness in acquiring such guidance by noting:

> Faculty mentoring is extremely limited or non-existent. Though faculty may have the desire to help other faculty members, there is no mentoring training either; skills in performing that role are quite spotty as a result, so there is no help with critical thinking instruction from that avenue either.

Seagull, a faculty member with between six and ten years teaching experience, exhibited frustration in the faculty development process and provided a passionate statement:

> As a faculty member, I don't remember any formal training in how to teach critical thinking. We have defined it in our program, and expect it to be taught, but there is no formal process for learning how to do it. The training I have received in critical thinking has occurred on my own by reading about it, attending inservices [faculty development workshops] or outside faculty education programs. I then try to introduce these things in my classroom.

Only one faculty member indicated that the nursing program at this institution provided the definition of critical thinking; however, the details of that definition were not explained. As a whole, the majority of the faculty received some sort of training designed to teach adult learners. However, they were not clear about whether the staff development training received addressed critical thinking. Those who did not receive training were

candid in their frustration and suggested that training designed to improve critical thinking pedagogy is greatly needed.

Question 6 on the OOQ asked faculty to describe how they themselves demonstrate critical thinking skills within the classroom as instructors. Although faculty members understand the importance of modeling critical thinking in the classroom, most responses for this question provided a description of the techniques or methods used to teach students how to think critically. Two participants illustrated their methods of demonstrating critical thinking within the classroom: Mockingbird and Bluebird. Mockingbird, the critical thinking expert, described that he/she "use[s] Socratic questions related to the content" and explained other techniques utilized to promote discussion within the classroom, such as case studies, games, and computer assisted instruction. Bluebird, a relatively new faculty member who recognized that the learner-centered teaching approach is better than faculty-centered pedagogy, revealed:

> We are initiating new methods and working daily at moving farther away from teacher-driven learning to student driven acquisition of knowledge. I'm constantly evaluating and choosing my next course of action based upon the previous outcome, which definitely requires daily use of my critical thinking skills.

Unlike Mockingbird and Bluebird, other participants did not actually respond to the question but instead provided the techniques they use to teach students how to think critically within the nursing program. For example, Pelican optimistically explained that he/she exhibited his/her critical thinking skills within the classroom by using "power points but not as a sole learning opportunity" and by trying to "simplify harder concepts using ideas I developed when doing community health teaching in other countries."

Critical Thinking Evaluation

The fourth and final research question for this study sought to address critical thinking evaluation and how results of the evaluation are used. Questions 10 and 11 of the OOQ asked participants to explain how they assess students' critical thinking ability within the classroom and how the results are utilized.

Question 10 asked participants to describe when and how critical thinking is assessed within the classroom. Participants described multiple methods of assessing critical thinking within the classroom. It is important to note that participant responses indicated that the classroom is not just the physical classroom where lectures and skills labs take place, but that it also includes the clinical setting. This is evidenced by Cardinal's response that "critical thinking is assessed both formally (unit tests) and informally (asking student questions on key points, reviewing clinical preps, assessment findings, and client plan of care with the student during the clinical day." Nene believed that unit tests are not the only vehicle that can be used to evaluate growth in critical thinking and asserted that evaluation also takes place "in the clinical area at the end of the day."

The majority (75%) of the faculty described critical thinking assessment as multiple-choice testing using content-type questions. Bluebird specified, "At this point we assess critical thinking largely through testing." Robin explained that critical thinking is "assessed in ability to think critically when taking multiple choice questions." Finch and Cardinal both portrayed critical thinking assessment as a process utilizing unit testing based on content information and clinical performance. Seagull and Pelican communicated a sense of frustration regarding critical thinking assessment in the nursing program. Seagull expressed irritation in his/her response regarding assessment for critical thinking by stating:

> I don't think this [evaluating student critical thinking ability] is done. As I've stated, it usually is a written paper that does not require the student to think much, or it is a multiple choice test question. As an individual instructor I have little control over the methods of assessment. It's hard to "ensure" that students can learn critical thinking because this is not the way our evaluation process is set up. Our program uses multiple choice questions for evaluation and most of the questions are simple knowledge questions and do not involve critical thinking.

Pelican apprehensively stated that "assessment is performed by observation – not well developed," inferring that critical thinking assessment in the nursing program is not organized or structured. None of the participants answered the question regarding when assessment actually took place.

Although faculty described critical thinking evaluation methods as administering multiple-choice tests, a theme also emerged regarding clinical experiences and assessing students' reasoning skills. Faculty exercised their judgment and reasoning skills more within the clinical setting; and, 87.5% of the participants expressed that clinical experiences are viable settings for teaching and assessing students' critical thinking skills. Finch illustrated this idea by specifying:

> A combination of learning strategies is used in my classroom; the clinical day at the clinical site follows a structured routine (pre-conference, report from staff nurse, meet patient, report to instructor, patient assessments, report findings, medications and treatments as assigned with instructor direct supervision, report from staff nurse, post-conference, a time to wrap up day and student reflection).

Mockingbird made similar comments to those of Finch by stating:

> Clinical class in the hospital–pre-conference, students talk about their clinical prep for their assigned patient. Identify most important nursing problems and what the student will do to address the problem. Talk about medications, treatments, lab values and diagnostic tests related to their patient. Post conference follow-up on nursing care and problems and how the students solved the problems. Talk about legal ethical issues related to the patient's condition. Identify psychosocial and spiritual problems the patient may be experiencing and how to intervene therapeutically. This allows the student to be involved with the admission process and work with the staff. Students develop confidence in their physical assessment skills and interviewing techniques and the staff [members] love to have the help. It is a win[-]win situation.

Question eleven of the OOQ asked participants to share how the results of assessments for critical thinking are used. Even though several participants explained that they use results to measure the effectiveness of their teaching, the majority of them (75%) explained that information is used to evaluate student knowledge acquisition in order to gain a better understanding of how to work with students who are in need of supplementary training. Robin summed it up well by explaining that assessments are used to "work individually with students who need more development of the skill and assist them in working thru [sic] the steps of critical thinking." Two participants (25%) were discouraged with the process and indicated that results could be put to better use by revising content taught and improving teaching techniques. This is exemplified in Seagull's comment:

> As a group, the instructors look over what topics were missed on the achievement tests, but usually this is just to rewrite the question for the next time. When the next

> time comes, the question is not always changed. We also use [a] standardized test from ATI. The results often show areas in which the students, as a whole, are not learning. I feel this should be used to make changes in the content that is taught, or how we teach the content, but this is not done either.

Seagull's concerns are supported in the literature by Lowenstein and Bradshaw's (2001) comments that the nursing curriculum tremendously guides the level and type of content taught as well as how evaluation occurs.

The final question, number 12 on the OOQ, solicited participants' input regarding any other comment, suggestion, or concern they would like to share regarding critical thinking. Participants provided a large amount of additional information pertaining to this study which was included throughout corresponding sections of the findings using rich descriptions of participant responses and direct quotes.

However, two themes emerged from the researcher's request for faculty to provide additional thoughts and beliefs regarding critical thinking. First, nearly all (87.5%) faculty recognized that critical thinking should be taught and that critical thinking is important in nursing education in order to deliver safe patient care. Participants painted a vivid picture of their beliefs that critical thinking is significant in nursing education and for patient safety. Finch stated, "I feel it [critical thinking] is a vital component that needs to be taught. The nurse is the patient's only line of defense in the health care environment and has to think critically for the welfare of the patient." Mockingbird explained, "I believe teaching for critical thinking will prepare nurses to function effectively in the clinical setting. It develops skills that will assist the nurse in solving problems and making sound clinical decisions. This will eventually enhance patient outcomes and that is what nursing is all

about." Robin believes that critical thinking is an "essential skill that is used in all aspects of life, both private and professional." The Richard Paul Model advocates critical thinking for lifelong learning. Simpson and Courtney (2002) proposed that "nurses need to be prepared for lifelong learning, and the future nursing profession is going to recognize a graduate who can think critically and identify complex clinical phenomena" (Simpson & Courtney, 2002, p. 90). Boychuk (1999) postulated that critical thinking is important in the nursing profession because of the resourcefulness needed to work with seriously ill patients. Critical thinking is also important for the nursing profession because nurses deal with technology that is forever changing and address patient needs using a variety of methods.

Second, to graduate critically thinking nurses, educational programs must significantly improve support for faculty development in order to enhance critical thinking pedagogy. A majority (75%) of the participants sincerely expressed a serious need for support from nursing program directors to improve their teaching techniques. Finch indicated that he/she joined the institution's Quality Enhancement Plan (QEP) Committee which is focused on faculty teaching for critical thinking college-wide. This is evidenced by Finch's statement, "I joined the QEP committee because I am interested in this topic [critical thinking] and would like to learn more." Finch's willingness to join the QEP committee reflects a sincere desire to understand the concept, despite the fact that no other critical thinking training is provided by the nursing program administration team. Pelican agrees that not enough is done to help students obtain critical thinking skills and that there are barriers to teaching it: "We should do more practically and share more – the curriculum is so set and when we try new things we are criticized." Although Seagull agreed with both

Finch and Pelican, Seagull expressed irritation regarding the need for change in how the program is administered as well as the need for change to support the expectations of the nurse in the workplace. Seagull pointed out:

> I feel there's too much emphasis on doing things the way they have always been done, and therefore many of our nurses cannot critically think [sic]. I think that this is reflected in the changes in health care institutions who have taken away many of the nursing responsibilities due to the inability of the nurses to successfully master these responsibilities. I believe this will harm nursing in the future. Nurses need to be able to think, anticipate, and react appropriately before problems occur and not just react to the problem after the fact. We do not teach this to our students nor do we encourage this type of behavior. I believe students are being short-changed.

As mentioned in the literature review, the National League for Nursing (NLN), a nursing program accrediting association, proposed that nursing programs significantly change their teaching pedagogy to be more student-centered based on critical thinking as a foundation (NLN, 2005).

Summary of Findings

This section provides a brief summary of the findings for this study investigating the perceptions of full-time nursing program faculty regarding their responsibility to teach critical thinking skills to nursing students. This study revealed participant responses in reference to their definition and exposure to teaching techniques and assessment of critical thinking. Overall, the participants expressed the importance that nurses place on the ability to think critically and the need to teach students how to develop the necessary critical

thinking skills. Participants also established a sense of responsibility to ensure that students improve their critical thinking skills while in nursing school.

Collectively, faculty defined critical thinking as problem-solving techniques to prioritize patient care, indicating that they perceive critical thinking and problem-solving to be somewhat synonymous skills. Many participants indicated that they were exposed to critical thinking as nursing students by way of lecture, questioning, and problem-solving using the scientific method. Participants exhibited several techniques for teaching students how to think critically which included lecture, case studies, Socratic questioning, and holistic care plans. These techniques also mirror their descriptions of their exposure to critical thinking while in nursing school. A few acknowledged that they were not exposed to critical thinking as a student enrolled in nursing school. Participants seemed most comfortable in teaching and assessing critical thinking in clinical settings where students demonstrate skills learned while working with real patients. Trepidation was expressed regarding assessment of critical thinking. Assessment is viewed as a challenge because the nursing program curriculum limits evaluation by focusing on the student's ability to demonstrate nursing skills. Although faculty openly shared methods for assessing critical thinking ability, administering unit exams with multiple-choice questions is the customary technique used to assess student thinking skills. Finally, faculty postulated the importance of critical thinking in the nursing profession and recommended support from the nursing program administration to improve their ability to teach critical thinking skills to nursing students.

Chapter Summary

The purpose of this study was to evaluate faculty beliefs and perceptions regarding teaching critical thinking skills to nursing students. The sample consisted of eight, full-time, nursing program faculty located at one higher education institution in west-central Florida. Data were collected using an online, open-ended questionnaire located on a secure researcher-developed website.

Chapter IV presented data captured during the analysis process and included the following demographic data: years of experience as a nursing professional and faculty member, participant age, level of education, and program level where the faculty member is currently teaching. The majority (62%) of the participants had more than 20 years of experience as a registered nurse. A little less than half of the participants (49%) were age 50 or less. The majority of the participants (75%) had up to 10 years experience as a nursing program faculty member. The majority (87.5%) had a master's degree; only one participant held a doctoral degree.

This chapter summarized the insights and perceptions of full-time, nursing program faculty members relevant to their responses to the online, open-ended questionnaire located on a secure researcher-developed website. The text outlined the category of responses according to the research questions. Participants responded that critical thinking and problem-solving are similar concepts. Their definition of critical thinking was reflected and demonstrated by their methods used to teach critical thinking in the classroom. Some of the newer faculty expressed concern about their ability to teach critical thinking and expressed the need for training. Regarding faculty exposure to critical thinking, the majority of the participants indicated that they received critical thinking training in the form of lecture,

questioning, and case studies. When asked about evaluating critical thinking abilities, several participants expressed confidence in assessing critical thinking during the clinical experience instead of in the classroom. Most of the participants acknowledged a need for critical thinking in the nursing program for safe delivery of patient care. Participants also acknowledged a need for training. After revealing participant responses to the research questions, a synopsis of the findings was provided and the section ended with a summation of the entire chapter.

CHAPTER V

DISCUSSION OF THE FINDINGS

Introduction

Teaching critical thinking is not a new concept. It is an idea that has been in existence since the teachings of Socrates, Plato, and Aristotle in ancient Greece (Paul, Elder, & Bartell, 1997; Sharpes, 2001). The concept has been supported throughout many centuries by philosophers, such as Dewey, who argued that the purpose of education is to teach students to think critically (Nosich, 2005; Paul, 2005; Paul & Elder, 2006; Yuretich, 2004). The need for individuals to think critically expanded beyond educational concerns to that of workforce needs. Employers argue that college graduates who are newly hired must possess the ability to think critically (Larson, Osterweis & Rubin, 1994; McCrink, 1998). This need is true for all professions, especially the healthcare workforce and particularly nursing (Larson, Osterweis & Rubin).

Nurses who think critically exhibit good clinical judgment skills needed to deliver safe patient care which results in making fewer medical errors (Banning, 2006; McCarthy & Blumenthal, 2006; Simpson & Courtney, 2002). Nursing program faculty agree that nursing students must acquire the ability to think critically; but, they are perplexed when it comes to teaching critical thinking methodology (Haix & Reybold, 2005). While there are a wealth of authors and studies that support the need for and importance of critical thinking in education (Banning, 2006; Bissell & Lemons, 2006; Brooks & Shepard, 1990; Catalano, 2006; Del Bueno & Hott, 2001; Elder, personal communication, July 25, 2006; Ford & Profetto-McGrath, 1994; Haix & Reybold, 2005; Krammer, 1993; Miller & Malcolm, 1990; Paul & Heaslip, 1995; Pithers & Soden, 2000; Profetto-McGrath, 2003; Simpson &

Courtney, 2002; Tschikato, 1993), the debate remains between teaching for critical thinking versus content when it comes to teaching nursing students (Bruning, Schraw, Norby, & Ronning, 2004). As a result, there is an apparent gap between nursing education and healthcare workforce needs regarding critical thinking. Nursing program faculty serve as catalysts to student knowledge acquisition; therefore, to close this gap it is important for higher education experts to gain an understanding of nursing program faculty beliefs and perceptions regarding teaching critical thinking skills to nursing students.

Summary of the Study

This study focused on the beliefs of full-time nursing program faculty regarding their responsibility to teach critical thinking skills to nursing students. Although higher education, accrediting associations, and hospital/medical care leaders agree that there is a need for graduates to acquire the ability to think critically (McMahon, 2005), a gap between education and employment continues to exist when it comes to college students or graduates exhibiting critical thinking skills. This is evident by the results of two national studies regarding employer expectations and worker abilities: the Secretaries Commission on Achieving Necessary Skills (SCANS) and a study by the American Society for Training and Development (ASTD). Both reports found serious gaps between employer expectations and the skill sets of new employees. The results of each study identified critical thinking as an essential competency for employees to have to be successful on their jobs. Therefore, this study provides credibility to help close the education and workforce gap by exploring faculty beliefs and opinions regarding their influence on students' ability to acquire critical thinking skills. The results of this study offer information that will help close the gap between education and workforce expectations and needs; plus, the study provides

educators with guidance regarding faculty development programs and training initiatives to supplement teaching methods and techniques.

This research study was administered within an associate degree nursing program at a four-year college in west central Florida. The institution confers associate and baccalaureate degrees. The University Partnership Center, an initiative where the college develops partnership agreements with other colleges and universities, provides students with an opportunity to earn select bachelors, masters and doctoral degrees locally. The college is unique in its structure and degree offerings; therefore, it is considered a hybrid institution (Lorenzo, as cited in Floyd, Skolnik, & Walker, 2005) because it offers a plethora of degree options ranging from associate to doctoral degrees. For this reason, the institution was referred to as a community college in this study.

Eight full-time, associate degree, nursing program faculty participated in this study by responding to a 12-question, online, open-ended questionnaire located on a secure researcher-developed website. The questionnaire was designed to explore the beliefs and opinions of two-year nursing program faculty regarding their definition of and exposure to critical thinking concepts, teaching techniques, and assessment procedures. Data was collected, explored, and deduced using the phenomenological qualitative approach and analyzed using Rubin and Rubin's (2005) Responsive Interviewing Model, which consisted of constructing themes, presenting narratives and direct participant quotes to illuminate the meaning of faculty views.

Purpose

The purpose of this study was to explore faculty perceptions regarding the significance of teaching critical thinking skills in a full-time, community college nursing

program. In examining the components of and beliefs about teaching critical thinking, it was noted that students who acquire critical thinking skills will become more competent nurses and will enter the profession better prepared to deliver safe patient care (Lowenstein & Bradshaw, 2001). For this reason, understanding faculty opinions about teaching critical thinking is vital to students' knowledge and skills acquisition. The results of this study can also be utilized by nursing program directors and educators interested in enhancing faculty development to improve critical thinking pedagogy.

In order to understand faculty perceptions of their responsibility to teach critical thinking skills to nursing students, four research questions were developed to gain a clear understanding of faculty beliefs and opinions regarding their sense of responsibility to teach critical thinking skills:

1. How do nursing program faculty in two-year nursing programs define critical thinking within the classroom?
2. How does the definition of critical thinking influence the techniques nursing program faculty use to teach critical thinking skills in the classroom?
3. How well are community college nursing program faculty prepared to teach adult learners critical thinking skills?
4. How is critical thinking assessed in the classroom by two-year nursing program faculty?

Significance of the Study

Nursing program community college teachers, like other faculty, face multiple challenges within the classroom, such as ensuring that students gain skills and knowledge for safe patient care, while using content-based lectures and rote memorization as teaching

techniques. Faculty also struggle with teaching graduate nursing students who are responsible for teaching students in associate degree programs. In addition, nursing program faculty are faced with teaching important content material in the face of constantly changing patient care techniques, technology, and hospital protocol (Cherry & Jacob, 2002). Combined, all of these issues make it difficult for faculty to keep pace with the ever-changing needs of the healthcare workforce.

This study is significant because critical thinking is an important skill for healthcare professionals to possess, especially nurses (Del Bueno, 2005; Lowenstein & Bradshaw, 2001; NLN, 2005; Tabak, Adi & Eherenfeld, 2003); therefore, it is imperative that nursing program faculty teach students to think critically (Simpson & Courtney, 2002). In order to address the needs of the workforce and improve the quality of patient care, as well as reduce medical errors, there is a need to explore and understand faculty opinions and beliefs regarding their role in ensuring that nursing students obtain critical thinking skills. Although there are several studies regarding nursing and critical thinking (Banning, 2006; Haix & Reybold, 2005; Halpern, 2002; Simpson & Courtney, 2002), there is a deficiency in the number of studies presented on the subject of community college faculty perceptions related to teaching critical thinking to nursing students.

Method

The study was conducted via a 12-query Online Open-ended Questionnaire (Appendix B) using a secure researcher-developed website located on the Internet. This study included a purposeful sample of eight participants recruited using the snowball effect. Utilizing the Nursing Faculty Recruitment Manuscript (Appendix G), program directors recruited participants and provided information to access the secure researcher-

developed website. The researcher also disseminated the Research Information Flyer (Appendix H) to all eligible faculty members explaining the research project and how to access the research website. Participants who entered the website and agreed to participate in the study confirmed their participation electronically by selecting the yes option on the Informed Consent Form (Appendix E) and proceeded to the Online Demographic Data and Participant Log-in Form (Appendix C). The Demographic Data and Participant Log-In Form required the participant to identify an email address where the secure researcher-developed website forwarded a communication alert informing him or her to go to the website to review communications from the researcher. Although participants' identified their personal email address, the email address was unknown to the researcher because the website was designed to block the researcher from viewing personal email addresses. The Online Demographic Data and Participant Log-in Form required the participant to enter demographic data, select a new identification name (a bird name), and create a new password. Upon completion of this procedure, the participant was asked to exit the website and re-enter using his or her new identification name and password. Once the participant logged in using his or her new personal identification name and password, he or she gained access to the Online Open-ended Questionnaire (Appendix B). The questionnaire allowed the participant the freedom to provide detailed responses to open-ended questions. Once the participant completed the questionnaire, an automatic thank you message was sent to the participant.

Data was analyzed using the responsive interviewing model of Rubin and Rubin (2005). The Rubin and Rubin approach requires researchers to perform a microanalysis by reading each participant response individually and performing a constant comparative

analysis. Using this model required the researcher to bracket personal experiences and biases. It also required the researcher to be reflexive of feelings after the first reading. Reflexivity and bracketing for this study was documented using the Questionnaire Contact Activity Form (Appendix A). Member checking was used to ensure that the interpretation of the data was accurate. Numerous readings of participant responses helped immerse the researcher in participant opinions and beliefs. Coding, the construction of themes and other qualitative interpretation methods were employed.

Discussion of Findings

The eight full-time nursing program faculty members who participated in this study emerged as intellectual, persevering, and discerning instructors who expressed a strong desire to help students become successful nurses. While the data revealed that the entire group (100%) unreservedly agreed that teaching nursing students to think critically is imperative to their role as an instructor, they were divided regarding their definition of critical thinking, identification of effective teaching techniques, and approach to evaluating outcomes. As exemplified in the literature, there are several definitions for critical thinking. This study focused on the Richard Paul Model (RPM) for Critical Thinking as the theoretical framework; therefore, participant responses will be discussed accordingly.

Critical Thinking Defined

Findings related to the first research question pertaining to the definition of critical thinking revealed that participants described critical thinking in various ways. For clarification, critical thinking, according to the Richard Paul Model (RPM), is defined as the process of utilizing knowledge and skills to create beliefs and the practice of using information and skills to guide decisions (Scriven & Paul, 2001). Since the RPM is the

theoretical framework for this study, the RPM definition, techniques, and assessment methods will be used in the data analysis.

While participants identified critical thinking and its components according to their understanding, one participant (13%) provided a clear or vivid description for critical thinking that is compatible with the RPM definition. The notion of faculty misunderstanding the meaning of critical thinking is consistent with the findings of the Commission on Teacher Credentialing in California and the Center for Critical Thinking, a 1995 study of faculty at Sonoma State University in California. The outcomes revealed that although 89% of the participants surveyed believed they taught critical thinking skills, only 19% could explain what critical thinking is (Bissell & Lemons). Similarly, nursing program faculty in the present study struggled in their attempts to define critical thinking. Seven (87%) nursing program faculty considered critical thinking to be a process designed to solve problems and make safe clinical judgments, indicating that participants lack a clear understanding of the definition of critical thinking as well as its components. Although the Richard Paul Model considers critical thinking to be a process, it is not a concept designed solely for problem-solving. The viewpoint of faculty equating critical thinking with problem-solving is not a new discovery. Several authors (Cherry & Jacob, 2002; Murray & Atkinson, 2000; Simpson & Courtney, 2002) postulated that faculty who misunderstand the definition of critical thinking often substitute the term for other components such as problem-solving. This viewpoint is basically promoted due to the nature of the nursing profession itself. As part of the nursing process, nurse education seeks to solve problems which heavily resembles problem-solving and thinking like a nurse. Thinking like a nurse is based on obtaining an understanding of the process of disciplined thinking (Murray &

Atkinson). According to Cherry and Jacob, “The nursing process is a problem-solving process that includes assessment, analysis and diagnosis, planning, implementation, and evaluation and has been proven to be effective to manage the complex decisions required in nursing practice” (p. 374).

However, critical thinking and problem-solving are totally different concepts. Problem-solving is a component of critical thinking, but not its equal. The majority of the participants understood problem-solving to be a technique to make decisions, but the RPM supports that one does not think critically only to solve a problem. In summary, according to the RPM, faculty may not understand what critical thinking is although they earnestly believe they do (Paul, 2006), and their definition of critical thinking greatly impacts how the concept is taught.

Critical Thinking Teaching Techniques

Findings related to the second research question regarding how faculty members’ definition of critical thinking influences their teaching techniques in the classroom revealed the naked truth that participants’ teaching techniques unquestionably mirrored how they characterized critical thinking. This characterization is a reflection of the nursing process, which is basically a problem-solving method. Because participants’ understanding of the concept is somewhat complicated, their ideas of teaching techniques for critical thinking are fairly convoluted. When describing their teaching techniques for critical thinking, only a few (37.5%) of the participants conveyed methods that agree with the RPM model. This small group of participants responding with teaching techniques that agree with the RPM used questioning, dialogue using Socratic questions, and student participation. These results coincide with the results of a study of nurses’ perceptions of critical thinking by

Jones and Brown (as cited in Boychuk-Duchscher, 1999), which found that nurses considered critical thinking to be similar in character to the nursing process. Although critical thinking was narrowly defined, nurses were uncertain about their descriptions of the components. Based on the findings of their research, Jones and Brown postulated that "nursing education has interpreted the nursing process as synonymous with critical thinking" (Boychuk-Duchscher, p. 581), although they agree that critical thinking is a higher-quality concept in which problem-solving is a component. The RPM provides several techniques that faculty can use within the classroom to improve critical thinking, such as engaged lectures with questioning, teaching of critical thinking principles using subject matter, encouraging student mentoring, calling upon students to respond to a question, promoting listening skills, and speaking less in class so students exercise their ability to think more (Hiler & Paul, 2005).

Although participants indicated that they make an effort to discover ways to help students think better, their approaches are wide-ranging and vague. Most participants (62.5%) provided a plethora of methods that they believed would improve students' ability to think critically. These methods included lectures, questioning, case studies, and nursing care plans which are, according to Mertig (2003), used to convey basic nursing concepts intended to improve the skill of inquiry. According to several authors (Caram & Davis, 2005; Lowenstein & Bradshaw, 2001; Mertig, 2003), these techniques help arouse the students' curiosity to learn, but do not influence critical thinking. These are examples of how participants themselves were taught critical thinking, which corresponds precisely with the assumption that many faculty teach the way they themselves were taught (Paul, as cited in McMahon, 2005). As indicated in the findings of research question one, the

majority of faculty equated critical thinking with problem-solving, which is a common misunderstanding.

Faculty Preparation to Teach Critical Thinking

Findings related to the third research question concerning faculty preparation to teach critical thinking revealed that faculty received a variety of training experiences as nursing program students and practicing healthcare professionals. Several authors (Mertig, 2003; Pescosolido & Aminzade, 1999; Weimer, 2003) acknowledged that community college faculty members are competent in their field and dedicated to student learning. However, they rely on their personal educational experiences as the basis of their teaching methods (Johnson, 2002; Paul, as cited in McMahon, 2005). Faculty reliance on their personal experiences for teaching techniques provided the rationale for this research question.

First, participants were asked to describe their exposure to critical thinking when they were students in the nursing program. The majority (62%) indicated that they received critical thinking training that resembled a form of problem-solving and relied on the scientific method, instructor questioning, or writing nursing care plans. They also described their training to include learning how to think like a nurse and follow the nursing process. While participants provided a clear picture of how they believe they themselves were taught to think critically, most of the experiences described practices that aligned with the nursing process (Cherry & Jacob, 2002; Lowenstein & Bradshaw, 2001). The nursing process is a "problem-solving process that includes assessment, analysis and diagnosis, planning, implementation, and evaluation and has proven to be effective to manage the complex decisions required in nursing practice" (Cherry & Jacob, p. 374). As a result,

many participants confuse their teaching techniques for critical thinking with developing questioning or inquiry and problem-solving skills that are directly related to the nursing process. Faculty teach the way they themselves were taught, which was basically the nursing process using problem-solving techniques. These misperceptions greatly impact the student's ability to gain true critical thinking skills.

A small percentage (18%) of participants vividly stated that they either were not taught to think critically while in nursing school or did not remember being taught – indicating that they were not taught this skill while in nursing school. The same faculty members who said that they received no critical thinking training while in nursing school also indicated a lack of confidence in their ability to teach the concept.

To make matters more complicated, only a few participants (25%) indicated that they received critical thinking training as faculty members through the college's faculty development program. As a result, participants indicated frustration since they believed that students are exploited in the learning environment because faculty experiment with teaching techniques as a method of gaining pedagogical knowledge. The feeling of inadequacy is supported by Richard Paul (personal communication, July 25, 2006) who postulated that many faculty are not prepared to teach critical thinking skills because they themselves were not taught how to think critically. Faculty need development programs to increase their knowledge and ability to teach. According to Paul (as cited in Elder, 2005), faculty development programs should consist of:

> . . . establishing administrative support and commitment, creating internal processes that encourage incremental faculty and staff development, providing long-term workshops in critical thinking for faculty and staff, tying critical thinking to

assessment, accreditation and the college mission and keeping the focus on a rich, substantive concept of critical thinking (p. 1).

Overall, participants in this study revealed a desire to be efficient in their teaching ability and that they need help to realize this goal. This supports the view that faculty members are not adequately exposed to critical thinking, which adversely affects their ability to teach students how to improve their skills (Haas & Keeley, 1998). The data also revealed that faculty received various levels of exposure to critical thinking pedagogy as nursing students and as faculty members, which may impact how they teach and assess students' critical thinking abilities.

Critical Thinking Assessment

Findings related to the fourth research question addressed assessment techniques designed to measure student critical thinking skills. Understanding the purpose for assessing students is very important (Bissell & Lemons, 2006). Participants shared various purposes and understandings regarding the reason assessments are performed. Participant answers revealed that, from their perspective, the most comprehensive assessment used by the nursing program are unit tests consisting of multiple-choice questions focusing on content taught within the classroom. Typically, multiple-choice questions are content-based questions that require students to use memorization (Barnes, 1983; Paul, personal communication, July 28, 2006). The preferred use of multiple choice questions by faculty is further supported in a study conducted by Braxton and Nordvall (1985) who reviewed more than 83 college exams and found that less than five percent of the questions required students to think critically by using evaluation or assessment skills. Some of the participants (25%) in the current study implied that multiple-choice testing does not require

students to think critically since the majority of the questions on unit tests are simple knowledge questions that do not involve critical thinking. This understanding supports the need for directors of nursing programs to educate faculty on the program's purpose of assessing students' ability to think critically. Ennis (1993) proposed that the purpose for assessment should be to ascertain student thinking levels, provide student feedback and guidance regarding their thinking, inform faculty of the success of their efforts to teach critical thinking, further develop questions to enhance critical thinking, and inform institutions of their accountability for students to gain critical thinking skills. Without understanding the purpose for evaluating students' ability to think critically, it is difficult to design and/or utilize results.

Participants of this study understood the nursing programs' method of assessment; unfortunately, they painted a clear picture of confusion regarding the use of the results. Most participants (75%) emphasized that assessment results are currently used to measure student knowledge and describe actions taken to help the student improve, while others (25%) reported that they use assessment results to evaluate the effectiveness of their teaching techniques. Both uses of the results described by the majority of the participants are supported in the literature as preferred applications of assessment (Ennis, 1993; Paul, 2005). A few (25%) of the participants criticized the program's use of assessment results by expressing deep frustration and disapproval of the program's practice in assessing critical thinking. For example, Seagull, demonstrated frustration by noting:

> As a group, the instructors look over what topics are missed on the achievement tests, but usually this is just to rewrite the question for the next time… I feel this should be used to make changes in the content that is taught, or how we teach the

content, but this is not done either. Students often learn from finding out why their answers on the tests were wrong, but we can not discuss these rationales with the students."

These participants vividly exclaimed that assessment for critical thinking does not even take place, and that use of the results of unit exams are poor because faculty only use them to improve the wording and quality of test questions for the next administration of the exam. None of the participants indicated that assessment was done to specifically measure critical thinking.

Although Ennis (1993) acknowledged that most critical thinking assessments are multiple-choice, Paul (personal communication, July 28, 2006) proposed that interviewing is the best method of assessing critical thinking. The RPM describes assessment for critical thinking as including extended student and faculty interviews using open-ended questioning specifically related to thinking skills instead of a skills or knowledge exam (L. Elder, personal communication, July 25, 2006). For a sample of the RPM interviews, see Appendices M and N. Although time-consuming in its administration and assessment, the RPM interviews provide faculty with an in-depth understanding of how they themselves and their students view critical thinking.

Participants in this study seemed to drift from discussing critical thinking assessment to just assessment when responding to this research question. The results indicated that nursing program faculty members strive to provide assessment to ascertain students' ability to think critically but realize that additional training is greatly needed.

Emerging Themes

This section summarizes emerging themes revealed from the insights and perceptions of full-time, community college, nursing program faculty relevant to their questionnaire responses on a secure researcher-developed website. These themes are also explained throughout the data analysis in response to each research question outlined in Chapter IV. As a result of the data analysis process, five themes emerged.

Critical Thinking Defined as Problem-Solving

There are numerous definitions of critical thinking. Participants of this study provided several definitions of the concept according to their understanding. In most descriptions (75%), participants used the word critical thinking interchangeably with problem-solving. This occurred because the nursing process, according to several authors (Cherry & Jacobs, 2002; Murray & Atkinson, 2000; Simpson & Courtney, 2002), is similar to problem-solving. The nursing process also includes six steps: assessment, diagnosis, outcome identification, planning, implementation, and evaluation. These concepts greatly mirror problem-solving, a component of critical thinking. The notion of nursing faculty considering critical thinking and problem-solving as identical is validated in a 1994 study performed by Valiga and Bruderle regarding concepts deemed important in associate and baccalaureate degree nursing programs. The study of 137 nursing faculty yielded many results, but only one pertained to critical thinking. Both the associate and baccalaureate program faculty used the terms problem-solving, nursing process, and decision-making synonymously with critical thinking. Another study of a similar nature was developed by Videbeck (1997). The study focused on the uses of outcome criteria for critical thinking in baccalaureate nursing schools. The study of fifty-five baccalaureate nursing programs

found that eleven programs viewed critical thinking as being similar to problem-solving and decision-making. Faculty's misunderstanding of what critical thinking is, to a great extent, significantly influenced how they taught the subject.

Approach to Teaching for Critical Thinking

Participants exhibited two strategies for teaching critical thinking skills to students: confident or anxious. These tactics are related to attitude and point of view (Haix & Reybold, 2005). In a study by Haix and Reybold of liberal arts faculty perceptions of critical thinking, the results indicated that faculty opinion and approach to the subject influenced student learning. The faculty in this study viewed themselves as possessing outstanding critical thinking skills. The study also validated that the way in which faculty approach critical thinking is an influential factor in determining how much a student will learn. Several authors (Clarke & Gabert, 2004; Reybold, 2003) have postulated that there is a link between faculty theory of knowledge acquisition and logical thinking, which greatly impacts student learning ability (Haix & Reybold).

For this study, only a few (37%) of the participants exhibited confidence in their ability to teach critical thinking skills. They were certain about their understanding of what it is and, while they were students, grasped the concept. This is apparent because participants explained that the program used assessments to help faculty understand the students' ability to think critically. Participants who exhibited confidence in their approach to critical thinking provided, in detail, the processes they used within the classroom and clinical environment to help students develop skills. Not all participants approached the concept with such enthusiasm.

The majority (63%) of the participants approached the charge of teaching critical thinking with anxiety. For example, Bluebird explained:

> It [critical thinking] is a skill we have had to learn flying by the seat of our pants. I think that the biggest problem with teaching anything to nursing students is that nursing instructors are largely practitioners who have a love for nursing and hopefully a love for students, but don't have any real background in teaching. The prevailing belief in nursing education seems to be that anyone with an advanced degree in nursing can learn to teach. It's just not that simple. Becoming a good, effective teacher is not something that will automatically happen through on-the-job training. Even if you are lucky enough to evolve in that fashion, there are a lot of students who become your guinea pigs as you learn who actually deserve better than that. I think that nursing is on the right track in emphasizing critical thinking, but I think that things would be much better if the process was applied by nurses to training faculty first.

Participants expressed frustration with the process and indicated a need for help. Part of the discomfort with teaching critical thinking may occur because participants were not adequately exposed to the concept as students (Clarke & Gabert, 2004; Haas & Keeley, 1998; Paul, as cited in McMahon, 2005). When asked to describe what a typical day is like, the participants painted a picture of uncertainty by using words such as "maybe" and "perhaps" to describe the plan of the daily classroom schedule. When asked what methods they would use to ensure that students develop their critical thinking ability, one participant, Pelican, stated, "I do not know if I can ensure." Other statements indicated that participants experienced anxiety when dealing with the curriculum and a perceived lack of

support from the administration. Combined, these concerns negatively impacted their approach and attitude, not only toward teaching, but also toward teaching critical thinking.

Faculty members' approach or attitude toward critical thinking greatly impacts student knowledge acquisition (Clarke & Gabert, 2004; Reybold, 2003). To improve their approach to teaching adult learners, faculty must put aside their anxiety and biases that may negatively impact student learning and critical thinking ability (Haix & Reybold, 2005).

Critical Thinking Assessment Occurs in the Clinical Setting

When answering the online, open-ended questionnaire regarding critical thinking assessment, a majority of the participants (85%) emphasized that while most critical thinking pedagogy takes place within the classroom, it is the clinical setting where they consider measurement to be most appropriate. Participants were more comfortable and confident assessing critical thinking skills within the clinical setting because they believed that the clinical environment prepares students to use judgment and reasoning skills. This is supported by faculty explanations of questioning and observing students while they work with real patients. Mockingbird shared that critical thinking assessment takes place in the clinical setting at the hospital where students demonstrate their ability to transfer classroom knowledge to real life situations. Mockingbird described several activities that took place during clinicals designed to assess students' ability to think critically: pre/post conference assessment, nursing care plans, questioning students about patient problems, and ethical and legal issues concerning patient care.

Clinical experiences for nurse education are critical to the curriculum as a whole in that obtaining the right clinical skills provides students with the ability to apply the knowledge they received during theory class in a real health care setting under the

supervision and training of certified clinical faculty (Allison-Jones & Hirt, 2004; Sand-Jecklin, 2000). Clinical experiences also provide students with the ability to utilize their knowledge in decision-making and problem-solving situations (Allison-Jones & Hirt). This mirrors participants' explanations of how they question students in the clinical setting to help them expand their decision-making and problem-solving skills. During the clinical experience, nursing students also gain a better understanding of their role as a nurse and caregiver.

Parsell and Bligh (2001) proposed that nursing instructors must have extensive clinical knowledge and are required to know their patients, students, and environment well. They must know the academic ability of their students as well as the general pedagogy of teaching, and they must also learn to rely on the clinical knowledge they have experienced through interaction with many types of patients.

Critical Thinking is Necessary for Nursing Education

An educated society is a thinking society (Nosich, 2003; Paul, 1995; Paul & Elder, 2003). The argument has been whether or not faculty should teach students what to think as opposed to how to think (Bruning, Schraw, Norby, & Ronning, 2004). Participants in this study are not resistant to critical thinking pedagogy and wholeheartedly support the idea of teaching students to think critically. Although not requested, nearly all (87.5%) participants voluntarily shared that they viewed critical thinking as a necessary component of nursing education. Understanding the importance of critical thinking is vital to faculty teaching as well as for the development of student skills. Participants expressed their support for teaching critical thinking and described it as "enhancing patient outcomes" which is "what nursing is all about." Another participant commented, "Nurses need to be able to think,

anticipate, and react appropriately before problems occur and not just react to the problem after the fact." Although participants were not asked if they considered critical thinking to be important to the nursing profession, they unanimously described it as a concept that is held in high regard.

Nursing Education is in Need of Improvement

The majority (75%) of the participants indicated that teaching critical thinking is important to the nursing profession and that more should be done by nursing education to improve critical thinking outcomes. Participants proudly explained that "critical thinking is essential in all aspects of life" and "prepares students for safe clinical practice." One participant took his/her colleagues' comments a step further and noted, "I feel it is a vital component that needs to be taught. The nurse is the patient's only line of defense in the heath care environment and has to think critically for the welfare of the patient."

Several participants expressed that, although critical thinking is essential for the nursing profession, as educators, they do not believe they are doing a good job teaching it. This shortfall results from their lack of exposure to critical thinking and teaching techniques, the curriculum (a set of courses within a program of study that guides the content covered in each class), and the resistance to change within nursing education. This feeling is evidenced by a participant pointing out, "We do not teach this [critical thinking] to our students nor do we encourage this type of behavior. I believe the students are being short-changed." Participants expressed that teaching methods and processes in the program remain constant, and that the lack of flexibility and encouragement to try new techniques prevents change from occurring. The curriculum design plays a role that further complicates the teaching and assessment of critical thinking in nursing programs because it

establishes course content and outcome goals which impacts teaching techniques. One participant exclaimed, "We should do more practically and share more – the curriculum is so set and when we try new things [we] can be criticized." As a whole, participants acknowledged that more could be done to ensure that graduates improve their thinking skills and expressed the need for improvement in this area.

Conclusions

Nursing program faculty believe that critical thinking is an important skill for nurses to have in order to practice safe patient care because proficiency in thinking saves lives and decreases the possibility of making medical errors (Simpson & Courtney, 2002; Keil, 2004). Healthcare workforce, nursing program accrediting organizations, and higher education experts agree that critical thinking is a vital component in enhancing the delivery of safe patient care and promoting life-long learning (Banning, 2006; Catalano, 2006; Del Bueno & Hott, 2001). Simpson and Courtney continued by stating that "nurses need to be prepared for life-long learning, and the future nursing profession is going to recognize a graduate who can think critically and identify complex clinical phenomena" (p. 90). The question is whether or not nursing program faculty members believe it is their responsibility to teach nursing students in a manner that develops their critical thinking skills. The answer is a resounding yes. Participants fully agreed that critical thinking is an essential skill for an efficient nurse practitioner. They also wholeheartedly concurred that it is indeed their responsibility to teach students how to think critically. The issue is that they recognize the need for students to think critically, but they struggle in understanding and teaching the concept themselves. Assistance from nursing program directors at the beginning of the teaching assignment is important to faculty and would be greatly

appreciated. This support could provide faculty with an in-depth orientation designed to improve pedagogy, specifically how to teach critical thinking skills. Adequate and frequent faculty development training programs should address the needs of the faculty and help close the gap between nursing program education and the needs of patients and the healthcare workforce.

Recommendations

Findings from the study have potential applications for faculty development training programs, the creation of a critical thinking assessment tool for nursing, and the reconstruction of the curriculum which will lead to an increased number of nurses entering the workforce with good thinking skills. First, community college nursing programs that desire to enhance student critical thinking skills should provide faculty with administrative support designed to increase faculty exposure to critical thinking. This support should include providing examples of critical thinking teaching techniques during faculty meetings and increasing the level of exposure to critical thinking. Understanding the definition of critical thinking from the program's standpoint will help ensure that students experience the definition as modeled by faculty in every class in which they enroll. Since faculty hold varied definitions of critical thinking, they tend to teach in accordance with their personal experiences and beliefs, which can be confusing to students. Without a clear definition, it is doubtful that their teaching techniques will be effective.

Second, directors of nursing programs should provide faculty with critical thinking teaching techniques through regularly scheduled faculty development training. Nurses are faced with many challenges including addressing constant change in technology, medication, and medical procedures. Frequent training and discussion during faculty in-

service workshops will help maintain knowledge of best practices and greatly influence faculty in the adoption of teaching methods conducive to producing students who are able to think critically. Regular discussions of critical thinking issues will strengthen the skills of current faculty and enhance the teaching effectiveness of new faculty. The use of best practices regarding teaching and learning will produce graduates who are prepared for the healthcare workforce.

Third, nursing as a profession should develop an assessment instrument that measures student and faculty critical thinking ability and is applicable to nursing as a discipline (Simpson & Courtney, 2002). This assessment tool will educate nursing program directors about the strengths and weaknesses of newly hired faculty regarding their understanding of critical thinking and other teaching techniques. An assessment tool for faculty will also provide detailed information useful in strategizing faculty development programs on critical thinking. An assessment tool for students will provide nursing program faculty with information to adequately prepare their teaching methodologies.

Finally, nursing programs must consider reconstructing the curriculum to become more learner-centered. Reengineering the curriculum could include specific outcomes intended to improve student critical thinking skills each term. Cherry and Jacob (2002) postulated that a curriculum that parallels nursing as a discipline with critical thinking would strengthen the ability to address the multiple aspects of nursing education and will help meet the needs of the healthcare workforce. Aligning the curriculum will close the gap between nursing program teaching goals and healthcare workforce needs.

Further Research

As stated previously, while there are many studies regarding nursing and critical thinking, very little is known about community college nursing program faculty and critical thinking. The results of this study yielded three recommendations for further research. First, a study of this kind from a gender and ethnic standpoint may prove to be valuable as the diversity of the community college nursing program faculty and student body increases. Currently, there are no known critical thinking studies regarding community college faculty based on gender or ethnicity (Elder, personal communication, August 28, 2006).

Second, because this study included a small sample population, a survey instrument should be designed from the findings and used across a larger population. This would strengthen the ability to generalize findings of this study by using the survey instrument to address faculty perceptions of critical thinking across disciplines.

The third and final recommendation is for a study comparing the definition of critical thinking from the perspective of healthcare workforce professionals and from the perspective of community college nursing program directors. A study of this kind would provide both the healthcare workforce and nursing program faculty with an opportunity to gain a common understanding of each group's definition of critical thinking and close the gap between educational goals and workforce needs.

Implications for Practice

As stated earlier, nursing program directors recognize that critical thinking is essential for student success in the healthcare workforce. The ability for nurse practitioners to think critically greatly depends on the academic and clinical educational experiences obtained while in nursing school. These experiences are made available through faculty

members. Therefore, nursing programs nation-wide must reconsider their curriculum development as well as the design of faculty development programs to enhance instructors' understanding and teaching of critical thinking. The results of this initiative will help meet the needs of the healthcare workforce as well as save the lives of patients.

Chapter Summary

This chapter provided an explanation of the most important findings for this phenomenological study using illustrations derived from a purposeful sample of eight full-time, nursing program faculty members located at one community college in west-central Florida. The findings are related to four research questions designed to address the overarching question regarding faculty beliefs about and opinions of their responsibility to teach critical thinking skills to nursing students. Although participants agreed unreservedly that it is the responsibility of the faculty to teach critical thinking skills to nursing students, they also revealed that they are under-exposed to the concept and lack an understanding of what critical thinking is. Participants were fully aware of this deficiency, and expressed a need for support from program directors regarding teaching and assessment techniques for critical thinking. Participant responses revealed five themes: faculty described critical thinking and problem-solving as synonymous concepts; participants approached teaching critical thinking either with confidence or anxiety; participants described assessing critical thinking in the clinical setting more frequently than in the classroom; participants acknowledged that critical thinking is necessary in nursing education; and, participants indicated a need for improvement in teacher preparation and techniques used to foster critical thinking in a nursing program.

In addition to the research findings and emerging themes, four recommendations were suggested to address the results of this study. These recommendations proposed that nursing program directors provide: a clear definition of critical thinking; a training program to enhance teaching ability and techniques; assessment methods to measure student critical thinking ability; and, a curriculum that addresses critical thinking expectations and actions to achieve outcomes.

Recommendations for further research include: conducting a study of this kind from a gender and ethnic standpoint; using a wider population for enhanced generalization; and, comparing healthcare managers' perspectives regarding critical thinking with nursing faculty members' perceptions to understand the possible gap between the expectations of health care employers and the teaching goals of nursing education programs.

Since the nursing profession considers critical thinking to be significant in the delivery of safe patient care and the reduction of medical errors, it is important to understand faculty beliefs and opinions regarding critical thinking and teaching techniques. The findings of this study provide several implications for practice. As stated earlier, the success of students gaining critical thinking skills greatly depends on faculty's interest, ability, and willingness to teach the concept. Faculty are challenged to teach a diverse student population and an ever-changing set of nursing skills that require critical thinking. To improve faculty ability to teach, nursing programs must consider providing intensive support and training to improve teacher ability and the assessment of critical thinking skills.

REFERENCES

Adler, M. J., & Ziglio, E. (1996). *Gazing into the oracle: The Delphi method and its application to social policy and public health.* Bristol, PA: Jessica Kingsley Publishers.

Agar, M. (1980). *The professional stranger: An informal introduction to ethnography*. San Diego, CA: Academic Press.

Alfaro-LeFevre, R. (1999). *Critical thinking in nursing: A practical approach* (2nd ed.). Philadelphia: W. B. Saunders Company.

Allison-Jones, L., & Hirt, J. (2004). Comparing the teaching effectiveness of part-time and full-time clinical nurse faculty. *Nursing Education Perspective*, *25*(5), 238-243. Retrieved October 25, 2005, from EBSCO Academic Search Premier.

American Philosophical Association. (1999). Critical thinking: A statement of expert consensus for purposes of educational assessment and instructions. *The Delphi Report: Research Findings and Recommendations Proposed for the Committee on Pre-college Philosophy. P. Facione (Project Director): 60* (pp. 315-423). Millbrae, CA: American Philosophical Association, (ERIC Document Reproduction Service, No. ED315-423).

Angelo, T. A. (1995). Classroom assessment for critical thinking. *Teaching of Psychology, 22*(1), 6-7.

Audi, R. (2001). *The Cambridge dictionary of philosophy* (2nd ed.). Cambridge, UK: Cambridge University Press.

Bailey, T. (2003). Community colleges in the 21st century: Challenges and opportunities. *Community College Brief from the Community College Research Center, 15*, 1-4.

Bandman, E. L., & Bandman, B. B. (1988). *Critical thinking in nursing*. Norwalk, CT: Appleton & Lange Press.

Banning, M. (2006). Nursing research: Perspectives on critical thinking. *British Journal of Nursing, 15*(8), 458-461.

Barbour, R. S., & Barbour, M. (2003). Evaluating and synthesizing qualitative research: The need to develop a distinctive approach. *Journal of Evaluation in Clinical Practice, 9*(2), 179-186.

Barnes, C. P. (1983). Questioning in college classrooms. In *Studies of college teaching: Experimental results, theoretical interpretations, and new perspectives* (pp. 61-82). Lexington, MA: D.C. Health.

Barr, R. B., & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education. *Change, 27*(6), 12-25.

Barrow, L. (2004). *A hermeneutic phenomenological study of philanthropian leadership*. Unpublished doctoral dissertation, University of Phoenix, Phoenix, AZ.

Barry, C. (2002). Multiple realities in a study of medical consultations. *Qualitative Health Research, 12*(8), 1093-1111.

Barry, S., Haynes, A., & Unterstein, J. (2003). *Assessing critical thinking skills*. Tennessee Technical University, 1-13.

Barton, P. L. (2003). *Understanding the U.S. health services system* (2nd ed.). Washington, DC: Health Administration Press.

Berg, B. (2004). *Qualitative research methods: For the social sciences* (5th ed.). Long Beach, CA: Pearson Education, Inc.

Bissell, A. N., & Lemons, P. R. (2006). A new method for assessing critical thinking in the classroom. *BioScience, 56*(1), 66-72.

Blake, N., Smeyers, P., Smith, R., & Standish, P. (2003). *The Blackwell guide to the philosophy of education*. Malden, MA: Blackwell Publishing.

Bloom, B. S. (1956). *Taxonomy of educational objectives: Handbook 1, cognitive domain.* White Plains, NY: Longman.

Bok, D. (2005). *Our underachieving colleges: A candid look at how much students learn and why they should be learning more.* Princeton, NJ: Princeton University Press.

Boland, D., & Finke, L. (2005). Curriculum designs. In D.M. Billings & J. A. Halstead (Eds.), *Teaching in nursing: A guide for nursing program faculty*, (pp.145-166). St. Louis, MO: Elsevier Sanders.

Borg, J., & Borg, M. (2001). Teaching critical thinking in interdisciplinary economic courses. *College Teaching, 49*, 20-25.

Boris, G., & Hall, T. (2005). Critical thinking and online learning: A practical inquiry perspective in higher education. *The Board of Regents of the University of Wisconsin System*, 1-7.

Boschma, G. (1994). The meaning of holism in nursing: Historical shifts in holistic nursing ideas. *Public Health Nursing, 11*, 324-330.

Boswell, K., & Wilson, C. (2004). Keeping America's promise: Challenges for community colleges. *Education Commission of the States and the League for Innovation in the Community College*, pp. 1-56.

Boychuk-Duchsher, J. E. (1999). Catching the wave: Understanding the concept of critical thinking. *Journal of Advanced Nursing, 29*, 577-583.

Braxton, J., & Nordvall, R. (1985). Selective liberal arts colleges: Higher quality as well as higher prestige? *Journal of Higher Education, 56,* 538-554.

Brookfield, S. D. (1987). *Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting*. San Francisco: Jossey-Bass, Inc.

Brooks, K. L., & Shepard, J. M. (1990). The relationship between clinical decision-making skills in nursing and general critical thinking abilities of senior nursing students in four types of nursing programs. *The Journal of Nursing Education, 29*(4), 101-109.

Brown, M. N., & Freeman, K. (2000). Distinguishing features of critical thinking classrooms. *Teaching in Higher Education, 5*(3), 301-304.

Brown, M., & Keeley, K. (2001). *Asking the right questions: A guide to critical thinking* (6th ed.). Upper Saddle River, NJ: Merrill-Prentice Hall.

Bruning, R., Schraw, G., Norby, M., & Ronning, R. (2004). *Cognitive psychology and instruction* (4th ed.). Upper Saddle River, NJ: Prentice Hall.

Burbach, M. E., Matkin, G. S., & Fritz, S.M. (2004). Teaching critical thinking in an introductory leadership course utilizing active learning strategies: A confirmatory study. *College Student Journal, 38*(3), 482-493.

Burns, N., & Grove, S. K. (2001). *The practice of nursing research: Conduct, critique and utilization* (4th ed.). Philadelphia: W.B. Saunders Company.

Campbell, S. (2003). Cultivating empowerment in nursing today for a strong profession tomorrow. *Journal of Nursing Education, 42*(9), 423-432.

Caram, C.A., & Davis, P. B. (2005). Inviting student engagement with questioning. *Kappa Delta Pi Record*, Fall 2005.

Carper, B. (1978). Fundamental patterns of knowing in nursing. *Advances in Nursing Science, 1,* 13-24.

Catalano, J. T. (2000). *Nursing now: Today's issues, tomorrow's trends* (2nd ed.). Philadelphia: F.A. Davis Company.

Catalano, J. T. (2006). *Nursing now: Today's Issues, tomorrow's trends* (4th ed.). Philadelphia: F. A. Davis Company.

Cherry, B., & Jacomb, S. R. (2002). *Contemporary nursing: Issues, trends and management* (2nd ed.). St. Louis, MO: Mosby, Inc.

Chinn, P., & Watson, J. (Eds.). (1994). *Art and aesthetics in nursing*. New York: National League for Nursing.

Clark, L., & Gabert, T. (2004). Nursing program faculty issues related to adult degree programs. *New Directions for Adult and Continuing Education, 10,* 31-40.

Clayton, L. H. (2006). Concept mapping: An effective, active teaching-learning method. *Nursing Education Perspectives, 27*(4), 197-203.

Cranton, P. (2005). *Understanding and promoting transformative learning: A guide for educators of adults* (2nd ed.). San Francisco: Jossey-Bass.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* Thousand Oaks: CA, Sage Publications.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Crotty, M. (2003). *The foundations of social research: Meaning and perspective in the research process*. Thousand Oaks, CA: Sage Publications.

Del Bueno, D. (2005). A crisis in critical thinking. *Nurse Education Perspectives, 26*(5), 278-282.

Del Bueno, D., & Hott, J. (2001). Philosophy: A key to open the door to CT. *Nursing Education Today, 18*, 281-292.

Denzin, N., & Lincoln, Y. (2000). *Handbook of qualitative methods* (2nd ed). Thousand Oaks, CA: Sage Publications.

Denzin, N., & Lincoln, Y. (2003). *The landscape of qualitative research: Theories and issues* (2nd ed.). Thousand Oaks, CA: Sage Publications.

DePoy, E., & Gitlin, L. (1998). *Introduction to research: Understanding and applying multiple strategies* (2nd ed.). Philadelphia, PA: Mosby Publication.

Dewey, J. (1933). *How we think: A restatement of the relations of reflective thinking to the educative process.* Boston, MA: D.C. Heath and Company.

Dirks, A. (1998). Constructivist pedagogy, critical thinking, and the role of authority. Bridgewater, MA: University of Massachusetts. Retrieved July 18, 2006, from http://webhost.bridgew.edu/adirks/ald/papers/constr.htm.

Dirkx, J., Kielbaso, G., & Smith, R. (2004). Epistemic beliefs of teachers in technology-rich community college technical education programs. *Community College Review, 31*(4), 25-48.

Doheny, M. O., Cook, C. B., & Stopper, M. C. (1997). *The discipline of nursing*. Stanford, CT: Appleton & Lange.

Donalek, J., & Soldwisch, S. (2004). An introduction to qualitative research methods. *Urolic Nursing, 24*(4), 354-355.

Dossey, B. M., Selanders, L. C., Beek, D. M., & Attewell, A. (2005). *Florence Nightingale today: Healing, leadership, global action.* Silver Spring, MD: American Nursing Association.

Drisko, J. W. (1997). Strengthening qualitative studies and reports: Standards to promote academic integrity. *Journal of Social Work Education, 33,* 185-197.

Elder, L. (2005). Critical thinking as the key to the learning college: A professional development model. *The Foundation for Critical Thinking*. Retrieved July 25, 2006, from http://www.criticalthinking.org.

Elder, L., & Paul, R. (2005). *A miniature guide for students and nursing program faculty to the foundations of analytic thinking: How to take thinking apart and what to look for when you do.* Berkeley, CA: Foundation for Critical Thinking.

Ennis, R. H. (1985). Goals for a critical thinking/reasoning curriculum. In *Illinois Critical Thinking Project*. Champaign, IL: University of Illinois.

Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities. In *Teaching thinking skills*: *Theory and practice*. New York: W. H. Freeman.

Ennis, R. H. (1993). Critical thinking assessment. *Theory into Practice, 32*(3), 179-186.

Erwin, T. (1997). *Definitions and assessment methods for critical thinking, problem solving and writing*. Harrisburg, VA: James Madison University, Center for Assessment and Research Studies.

Evans, L. K., & Lang, N. M. (2004). *Academic nursing practice: Helping to shape the future of health care.* New York: Springer Publishing Co.

Facione, P. A. (1990). *The Delphi report*. Millbrae, CA: The California Academic Press.

Field, R. (2001). *John Dewey*. Retrieved August 1, 2006, from http://www.utm.edu/research/ie/d/dewey/htm.

Fleming, M. (2002). Sources and information: Community college faculty. *New Directions for Community Colleges, 118*, 117-123.

Florida Department of Education (2005). Retrieved October 14, 2006, http://www.fldoe.org/org/cc/mindstowork/work.asp.

Floyd, D. L., Skolnik, M.L., & Walker, K. P. (2005). *The community college baccalaureate: Emerging trends and policy issues.* Sterling, VA: Stylus Publishing.

Fogarty, R., & McTighe, J., (1993). Educating teachers for higher order thinking: The three story intellect. *Theory into Practice*, *32*(3).

Ford, J., & Profetto-McGrath, J. (1994). A model for critical thinking within the context of curriculum as praxis. *Journal of Nursing, 33*(8), 241-344.

Frye, B., Alfred, N., & Campbell, M. (1999). Use of the Watson-Glaser Critical Thinking Appraisal with BSN students. *Nursing Health Care Perspectives, 20*(5), 253-255.

Gaff, J. G., Radcliff, J. L, & Associates. (1997). *Handbook of the undergraduate curriculum: A comprehensive guide to purpose, structures, practices, and change*. San Francisco: Jossey-Bass Publishers.

Gardiner, L. (1997). Redesigning higher education: Producing dramatic gains in student learning. *ASHE-ERIC Higher Education Report, 23*(7). Washington, DC: The George Washington University Graduate School of Education and Human Development.

Geerstein, H. (2003). Rethinking thinking about higher-level thinking. *Teaching Sociology, 31*(1), 1-19.

Gibson, C. (2003). Critical thinking: Implications for instruction. *American Library Association, 35*(1), 27-35.

Giorgi, A. (2005). The phenomenological movement and research in the human sciences. *Nursing Science Quarterly, 18*(1), 75-82.

Gordon, J. (2000). Congruency in defining critical thinking by nurse educators and non-nurse scholars. *Journal of Nursing Education, 39*(8), 340-351.

Guba, E. G., & Lincoln, Y. S. (1988). Do inquiry paradigms imply inquiry methodologies? In D. M. Fetterman (Ed.), *Qualitative approaches to evaluation in education,* (pp. 89-115). New York, NY: Praeger.

Haas, P. E., & Keeley, S. M. (1998). Coping with nursing program faculty resistance to teaching critical thinking skills. *College Teaching, 46*(2), 63.

Haix, M., & Reybold, L. (2005). A pedagogy of force: Nursing program faculty perspectives of critical thinking capacity in undergraduate students. *The Journal of General Education, 54*(4), 293-315.

Halpern, D. F. (1993). Assessing the effectiveness of critical thinking instruction. *The Journal of General Education, 42*(4), 238-254.

Halpern, D. F. (2002). *Thought and knowledge* (4th ed.). Mahwah, NJ: Lawrence Erlbaum.

Hamrick, F. A., Evans, N. J., & Schuh, J. H. (2002). *Foundations of student affairs practice: How philosophy, theory and research strengthen educational outcomes.* San Francisco, CA: Jossey-Bass.

Harrison, B., & Weiss, M. (1998). *Workforce development networks: Community-based organizations and regional alliances*. Thousand Oaks, CA: Sage Publications.

Heller, B., Drenkard, K., Eposito-Herr, M., & Romano, C. (2004). Educating nursing for leadership roles. *The Journal of Continuing Education in Nursing, 35*(5), 203-213.

Henrich, D. (2003). Subjectivity as philosophical principle. *Critical Horizons, 4*(1), 7-27.

Henry, M. (2002). Constructivism in the community college classroom. *The History Teacher, 36*(1), 65-74.

Henson, K. (2003). Foundations for learner-centered education: A knowledge base. *Education, 124*(1), 5-17.

Higgs, J., & Jones, M. (2000). *Clinical reasoning in health professions* (2nd ed.). Heineman, Oxford: Butterworth.

Hiler, W., & Paul, R. W. (2005). *A miniature guide for those who teach on practical ways to promote active and cooperative learning: Based on critical thinking concepts and principles.* Santa Rosa, CA: Foundation for Critical Thinking.

Hopwood, N. (2004). Research design and methods of data collection and analysis: Researching students' conceptions in a multiple-method case study. *Journal of Geography in Higher Education, 28*(2), 347-353.

Horn, L., & Neville, S. (2006). *Profile of undergraduates in U.S. postsecondary education institutions 2003-04: With a special analysis of community college students.* (NCES 2006-184). Washington, DC: U.S. Department of Education, National Center for Educational Statistics.

Huba, M. E., & Freed, J. E. (2000). *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning*. Needham Heights, MA: Allyn and Bacon.

Hummer, A. (1997). Measuring critical thinking outcomes via capstone course paper. *Assessment Update, 9*(3), 8-9.

Idczak, S. (2005). *Nursing students' experiences of being and presence: A hermeneutic approach*. Unpublished doctoral dissertation, University of Toledo, OH.

Jacobs, P. M., Ott, B., Sullivan, B., Ulrich, Y., & Short, L. (1997). An approach to defining and operationalizing critical thinking. *Journal of Nursing Education, 36*(1), 19-22.

Jewell, E., et al. (Ed.). (2001). *The Oxford essential dictionary of difficult words: American edition*. New York: Berkley Books.

Johnson, R. (2002). Exploring learning styles: Developing a flexible teaching approach. *American Music Teacher, 52*(2), 23.

Johnson R. H., & Waterfield, J. (2004). Making words count: The value of qualitative research. *Physiotherapy Research International, 9*(3), 121-131.

Kearns, D., & Doyle, D. (1988). *Winning the brain race: A bold plan to make our schools competitive*. San Francisco, CA: ICS Press.

Keil, O. (2004). Can technology alone ensure patient safety? *Journal of Clinical Engineering, 29*(4), 165.

Khosravani, S., Manoochehri, H., & Memarian, R. (2005). Developing critical thinking skills in nursing by group dynamics. *Internet Journal of Advanced Nursing Practice, 7*(1), 1-5.

Kirwan, W. (2006). Erasing the education deficit. *The Presidency: American Council on Education*, 16-23.

Knowles, M., Holton III., E., & Swanson, R. (2005). *The adult learner: The definitive classic in adult education and human resource development* (6th ed.), San Diego, CA: Elsevier Inc.

Krammer, M. (1993). Competence validation and cognitive flexibility: A theoretical model grounded in nursing education. *Journal of Nursing Education, 32*(9), 415-421.

Larson, P., Osterweis, M., & Rubin, E. (1994). *Health workforce issues for the 21st century.* Washington, DC: Association of Academic Health Centers.

Lipman, M. (2003). *Thinking in education* (2nd ed.). Cambridge, MA: Cambridge University Press.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publication

Lowenstein, A., & Bradshaw, M. (2001). *Fuszard's innovative teaching strategies in nursing* (3rd ed.). Gaithersburg, MD: Aspen Publishers, Inc.

Lunney, M. (2003). Critical thinking and accuracy of nurses' diagnoses. *International Journal of Nursing Terminologies and Classifications, 14*(3), 96-107.

Maricle, H. K. (2003). *Entry-level competencies of animal science professionals.* Unpublished master's thesis, University of Nebraska-Lincoln, Lincoln, NE.

McCabe, R. H. (2003). *Yes we can! A community college guide for developing America's underprepared.* Phoenix, AZ: League for Innovation in the Community College and American Association of Community Colleges.

McCarty, D., & Blumenthal, D. (2006). Stories from the sharp end: Case studies in safety improvement. *The Milbank Quarterly, 84*(1), 165-200.

McClenney, K., & Peterson, G. (2006). Effective educational practice: What we're learning from community college nursing program faculty. *Community College Journal*, pp. 25-27.

McCrink, C. L. (1998). The role of innovative teaching methodology and learning styles on critical thinking. (Doctoral dissertation, University of Miami, Coral Gables, FL, 1998). *Dissertation Abstracts International, 59, 129.*

McMahon, C. M. (2005). *Critical thinking: Unfinished business*. San Francisco: Jossey-Bass.

McPeck, J. E. (1981). *Critical thinking and education*. New York: St. Martin's Press.

Mertig, R. G. (2003). *Teaching nursing in an associate degree program.* New York: Springer Publishing Co.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Miller, M. M., & Malcolm, N. (1990). Critical thinking in the nursing curriculum. *Nursing and Healthcare, 11*(7), 67-73.

Morgan, W. (1995). "Critical thinking" – What does that mean? *Journal of College Science Teaching, 24*(5), 336-340.

Moustakas, C. E. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage Publications.

Murray, J. P. (2002). The current state of nursing program faculty development in two-year colleges. *New Directions for Community Colleges, 118*, 89-97.

Murray, M. E., & Atkinson, L. D. (2000). *Understanding the nursing process: In a changing care environment* (6th ed.). New York, NY: McGraw-Hill.

National League for Nursing (2005). *Transforming nursing education*. New York: Author.

O'Banion, T. (1997). *A learning college for the 21st century*. Phoenix, AZ: Oryx Press.

O'Brien, M. E. (1999). *Spirituality in nursing: Standing on holy ground*. Sudbury, MA: Jones & Bartlett.

Ogmen, K., Krugman, M., & Fink, R. (2003). *Nursing research secrets: Questions and answers reveal the secrets to successful research and publication*. Philadelphia, PA: Hanley & Belfus, Inc.

Palmer, I. (1985). Origins of education for nurses. *Nursing Forum, 12,* 102-110.

Parnell, D. (1985). *The neglected majority*. Washington, DC: The Community College Press.

Parsell, G., & Bligh, J. (2001). Recent perspectives on clinical teaching. *Medical Education*, *35*, 409-414.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research, Volume 2*. San Francisco: Jossey-Bass.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Paul, R. W. (1995). *Critical thinking: How to prepare students for a rapidly changing world.* Santa Rosa, CA: Foundation for Critical Thinking.

Paul, R. W., Elder, L., & Bartell, T. (1997). *California teacher preparation for instruction in critical thinking: Research findings and policy recommendations*. Sacramento, CA: California Commission on Teacher Credentialing.

Paul, R. W., & Elder, L. (2003). Critical thinking: Teaching students how to study & learn (part III). *Journal of Developmental Education, 26*(3), 36-37.

Paul, R. W., & Elder, L. (2005). *A guide for educators to critical thinking competency standards: Standards, principles, performance indicators, and outcomes with a critical thinking master rubric*. Santa Rosa, CA: Foundation for Critical Thinking.

Paul, R. W., & Elder, L. (2006). *The miniature guide to critical thinking: Concepts and tools* (4th ed.). Retrieved June 20, 2006, from the Foundation for Critical Thinking Web site: http://www.criticalthinking.org.

Paul, R. W., & Heaslip, P. (1995). Critical thinking and intuitive nursing practice. *Journal of Advance Nursing Practice*, *22*, 40-70.

Paul, R. W., & Nosich, G. (1991). *A proposal for the national assessment of higher order thinking at the community college, college, and university levels*. Washington, DC: National Institute of Education. (Eric Document Reproduction Service No. ED 272882).

Pescosolido, B., & Aminzade, R. (1999). *The social worlds of higher education: Handbook for teaching in a new century.* Thousand Oaks, CA: Pine Forge Press.

Phelan, D. J. (2000). Enrollment policies and student access at community colleges. *Enrollment Policies and Student Access at Community Colleges*. (pp. 1-11).

Phillippe, K., & Patton, M. (2000). *National profile of community colleges: Trends & statistics* (3rd ed.). Washington, DC: Community College Press, American Association of Community Colleges.

Phillippe, K., & Sullivan, L. (2005). *National profile of community colleges: Trends & statistics* (4th ed.). Washington, DC: Community College Press, American Association of Community Colleges.

Pithers, R. T., & Soden, R. (2000). Critical thinking in education: A review. *Educational Research, 42*(3), 237-249.

Profetto-McGrath, J. (2003). The relationship of critical thinking skills and critical thinking dispositions of baccalaureate nursing students. *Journal of Advanced Nursing, 43*(6), 569-577.

Ratner, C. (2002). Subjectivity and objectivity in qualitative methodology. *Forum: Qualitative Social Research, 3*(3), 1-7.

Reed, J. H. (1998). *Effect of a model for critical thinking on student achievement in primary source document analysis and interpretation, argumentative reasoning, critical thinking dispositions, and history content in a community college history course.* Unpublished doctoral dissertation, University of South Florida, Tampa, FL.

Reed, J. H., & Kromrey, J. D. (2001). Teaching critical thinking in a community college history course: Empirical evidence from infusing Paul's model. *College Student Journal, 35*(2), 201-216.

Reid, W. (1994). Reframing the epistemological debate. In E. Sherman & W. Reid (Eds.). *Qualitative Research in Social Work* (pp. 464-481). New York: Columbia Press.

Reybold, L. (2003). Pathways to the professoriate: The development of nursing program faculty identity in education. *Journal of Innovative Higher Education, 50*(1), 1-28.

Robinson, Z. (2003). Exploring the audit trail for qualitative investigations. *Nurse Educator, 28*(4), 175-178.

Rubin, H. J., & Rubin, I. S. (2005). *Qualitative interviewing: The art of hearing data*. (2nd ed.). Thousand Oaks, CA: Sage Publication, Inc.

Sand-Jecklin, K. (2000). Evaluating the student clinical learning environment: Development and validation of the SECEE Inventory. *Southern Online Journal of Nursing Research*, *4*(1), 1-16. Retrieved November 22, 2005, from http://www.snrs.org/publications/SOJNR_articles/iss04vol101.htm

Scheffer, B. K., & Rubenfield, M. G. (2000). A consensus statement on critical thinking in nursing. *Journal of Nursing Education, 39*(8), 352-359.

Schwandt, T. A. (2001). *Dictionary of qualitative inquiry* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Scriven, M., & Paul, R. (1996). *Defining critical thinking: A draft statement for the National Council for Excellence in Critical Thinking.* Retrieved July 14, 2006, from http://www.criticalthinking.org/University/univlibrary/library.nclk

Sears, A., & Parsons, J. (1991). Towards critical thinking as an ethic. *Theory and Research in Social Education, 19*, 45-68.

Selanders, L. (1993). *Florence Nightingale: An environmental adaptation theory*. Newberry Park, CA: Sage Publications.

Shapiro, S. (2005). *Medical-errors gap widens between best and worst hospitals: Healthgrades Study*. Retrieved June 12, 2006, from http://www.healthgrades.com/.

Sharpes, D. K. (2002). *Advanced educational foundations for teachers: The history, philosophy, and culture of schooling.* New York: RoutledgeFalmer.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*, 63-75.

Simpson, E., & Courtney, M. (2001). Critical thinking in nursing education: Literature review. *International Journal of Nursing, 8*, 89-98.

Slife, B., & Williams, R. (1995). *What's behind the research? Discovering hidden assumptions in the behavioral sciences.* Thousand Oaks, CA: Sage Publications.

Smith, J., & Crawford, L. (2003). Report of findings from the 2003 employers survey. *National Council of State Boards of Nursing Research Brief, 14*, 1-4.

Sochalski, J. (2002). Nursing shortage redux: Turning the corner on an enduring problem. *Health Affairs, 21*(5), 157-73.

Stone, C., Davidson, L., Evans, J., & Hansen, M. (2001). Validity evidence for using a general critical thinking test to measure nursing students' critical thinking. *Holistic Nursing Practice, 15*(4), 65-74.

Streeton, R., Cooke, M., & Campbell, J. (2004). Researching the researchers: Using a snowballing exercise. *Nurse Researcher, 12*(1), 35-47.

Sumner, W. (1906). *A study of mores, manners, customs and morals*. Boston: Ginn and Company.

Tabak, N., Adi, L., & Eherenfeld, M. (2003). A philosophy underlying excellence in teaching. *Nursing Philosophy, 4*, 249-254.

Talbot, L. (1995). *Principles and practice of nursing research.* St. Louis, MO: Mosby Publishers.

Tobin, G., & Begley, C. (2004). Methodological rigour within a qualitative framework. Blackwell Publishing Ltd., *Journal of Advanced Nursing, 48*(4), 388-396.

Tschikota, S. (1993). The clinical decision making process of student nurses. *Journal of Nursing Education, 32*(9), 389-397.

Tsui, L. (2002). Fostering critical thinking through effective pedagogy: Evidence from four institutional case studies. *Journal of Higher Education, 73*(6), 740-763.

van Gelder, T. J. (2005). Teaching critical thinking: Some lessons from the cognitive science. *College Teaching, 53*(1), 41-46.

Vaughan, G. (2000). *The community college story* (2nd ed.). Washington, DC: Community College Press.

Vella, J. (2002). *Learning to listen, learning to teach: The power of dialogue in educating adults*. San Francisco: Jossey-Bass.

Vito-Thomas, P. D. (2000). Identifying critical thinking behaviors in clinical judgments. *Journal for Nursing in Staff Development, 16*(4), 174-180.

Walters, K. S. (1994). Introduction: Beyond logicism in critical thinking. In *Re-thinking reason: New perspectives in critical thinking* (pp. 1-22). Albany, NY: State University of New York Press.

Ward, C. M. (2002). Preparing K-12 teachers to teach for social justice. *Multicultural Education*, *9*(4), 22-24.

Weimer, M. (2002). *Learner-centered teaching: Five key changes to practice.* San Francisco: Jossey-Bass.

Weimer, M. (2003). Focus on learning: Transform teaching. *Change, 35*(5), 48-55. Retrieved February 3, 2005, from http://www.galegroup.com.

Wingspread Group. (1993). *An American Imperative: Higher expectations for higher education.* Racine,Wisconsin: The Johnson Foundation.

World reference online dictionary.(2006, July 10). Retrieved July 10, 2006, from http://worldreference.com/definition/subjectivity.

Yeh, S. (2002). Tests worth teaching to: Constructing state-mandated tests that emphasize critical thinking. *Educational Researcher, 30*, 12-17.

Yuretich, R. F. (2004). Encouraging critical thinking: Measuring skills in large introductory science classes. *Journal of College Science Teaching*, *33*, 40-46.

APPENDICES

APPENDIX A

Questionnaire Contact Activity Form

Date and time of online questionnaire:_____

Assigned participant name for confidentiality:_____

Faculty of what allied health or nursing program:_____

Researcher Activity Notes	
Descriptive Notes	Reflexive Notes

This form is a revision of Creswell's (1998) observational protocol form.

APPENDIX B

Online Open-Ended Questionnaire

Critical Thinking Questionnaire

Thank you again for your interest in critical thinking and your willingness to participate in this research study.

The researcher will not be able to identify participants and link them to their answers and comments. So, please feel free to thoroughly answer each open-ended question and submit your responses, comments and concerns.

1. What is your username (hint: it is a bird)?

*** 2.** What is your definition for critical thinking?

*** 3.** In your opinion, what are the components of critical thinking?

*** 4.** How were you taught critical thinking skills when you were a nursing student?

Critical Thinking Questionnaire

Thank you again for your interest in critical thinking and your willingness to participate in this research study.

The researcher will not be able to identify participants and link them to their answers and comments. So, please feel free to thoroughly answer each open-ended question and submit your responses, comments and concerns.

*** 5.** What type of staff development training have you received as a faculty member designed to teach students to think critically?

*** 6.** Explain how you exercise your critical thinking skills within the classroom on daily basis?

*** 7.** The National League of Nursing (NLN) now requires nursing programs to consider critical thinking as an outcome of the student's educational experience. How do you ensure your students improve their critical thinking ability within the classroom?

Critical Thinking Questionnaire

Thank you again for your interest in critical thinking and your willingness to participate in this research study.

The researcher will not be able to identify participants and link them to their answers and comments. So, please feel free to thoroughly answer each open-ended question and submit your responses, comments and concerns.

*** 8.** What teaching methodologies do you practice to instruct students to think critically within your classroom?

*** 9.** Please provide a written synopsis of a typical day for students within your classroom.

*** 10.** When and How is critical thinking assessed within your classroom?

Critical Thinking Questionnaire

Thank you again for your interest in critical thinking and your willingness to participate in this research study.

The researcher will not be able to identify participants and link them to their answers and comments. So, please feel free to thoroughly answer each open-ended question and submit your responses, comments and concerns.

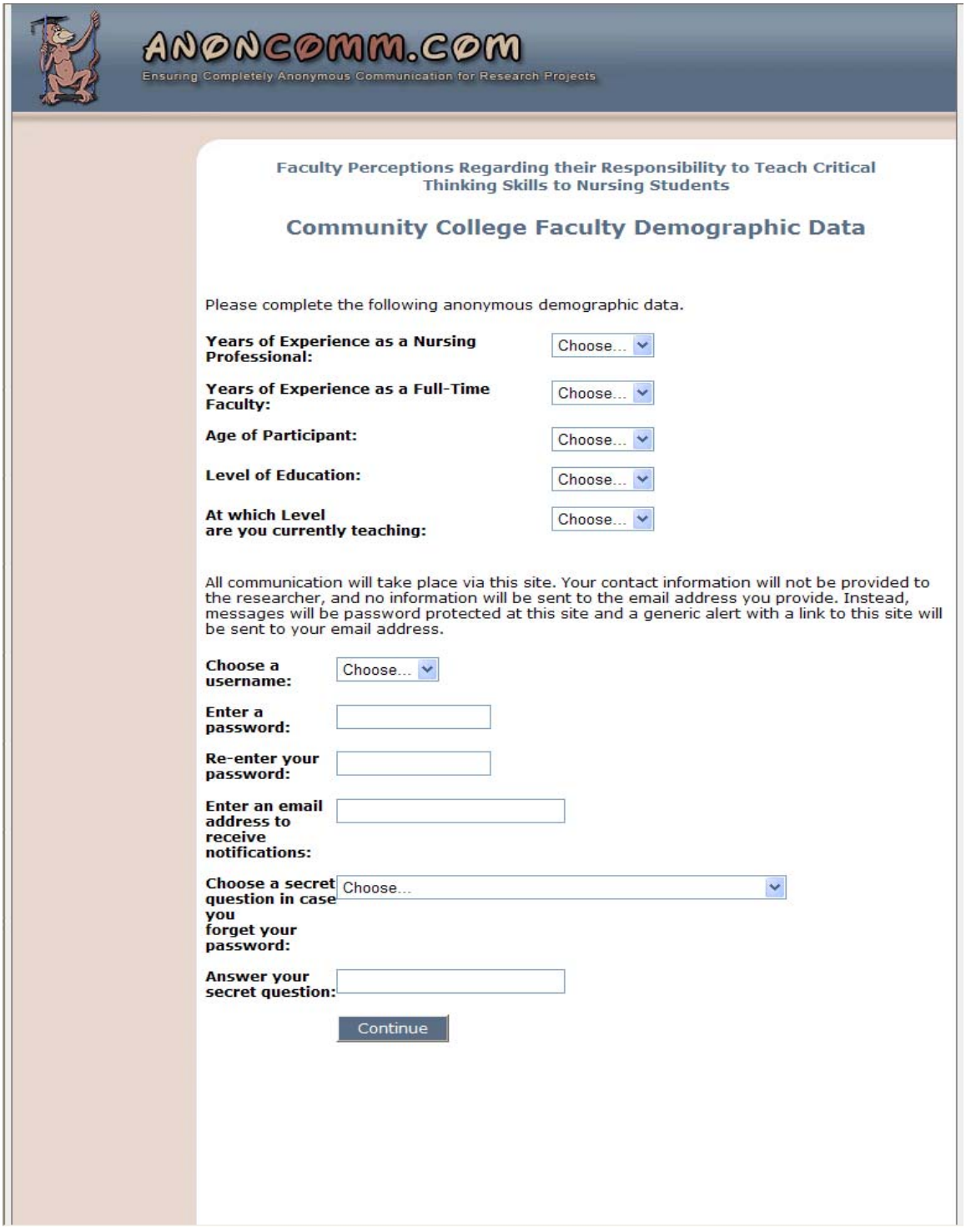
*** 11.** Once critical thinking is assessed within your classroom, how do you use the results from the assessment?

12. Is there anything else regarding your beliefs or perceptions of teaching nursing students critical thinking skills that you would like to add?

Submit

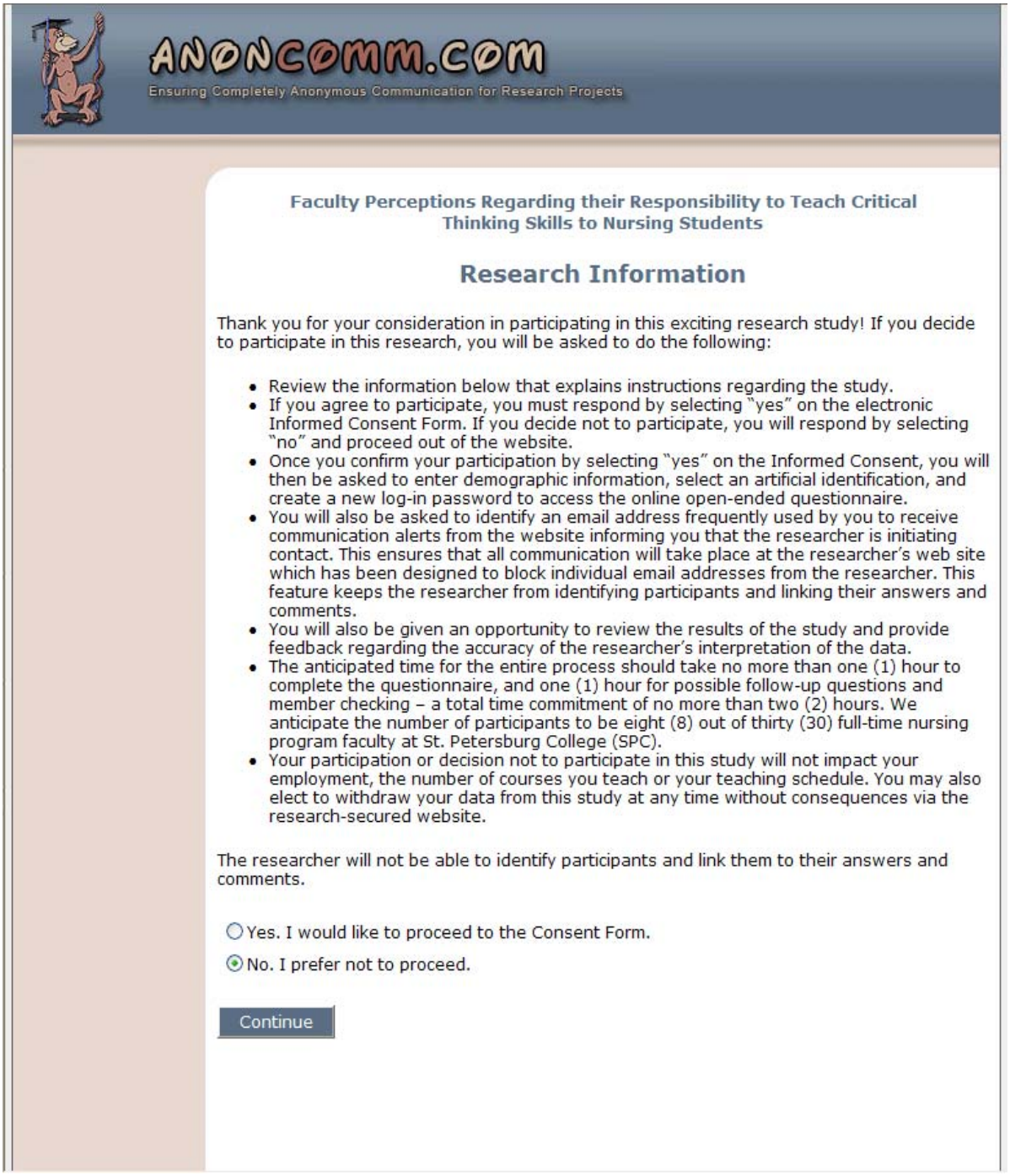
APPENDIX C

Online Demographic Data and Participant Log-in



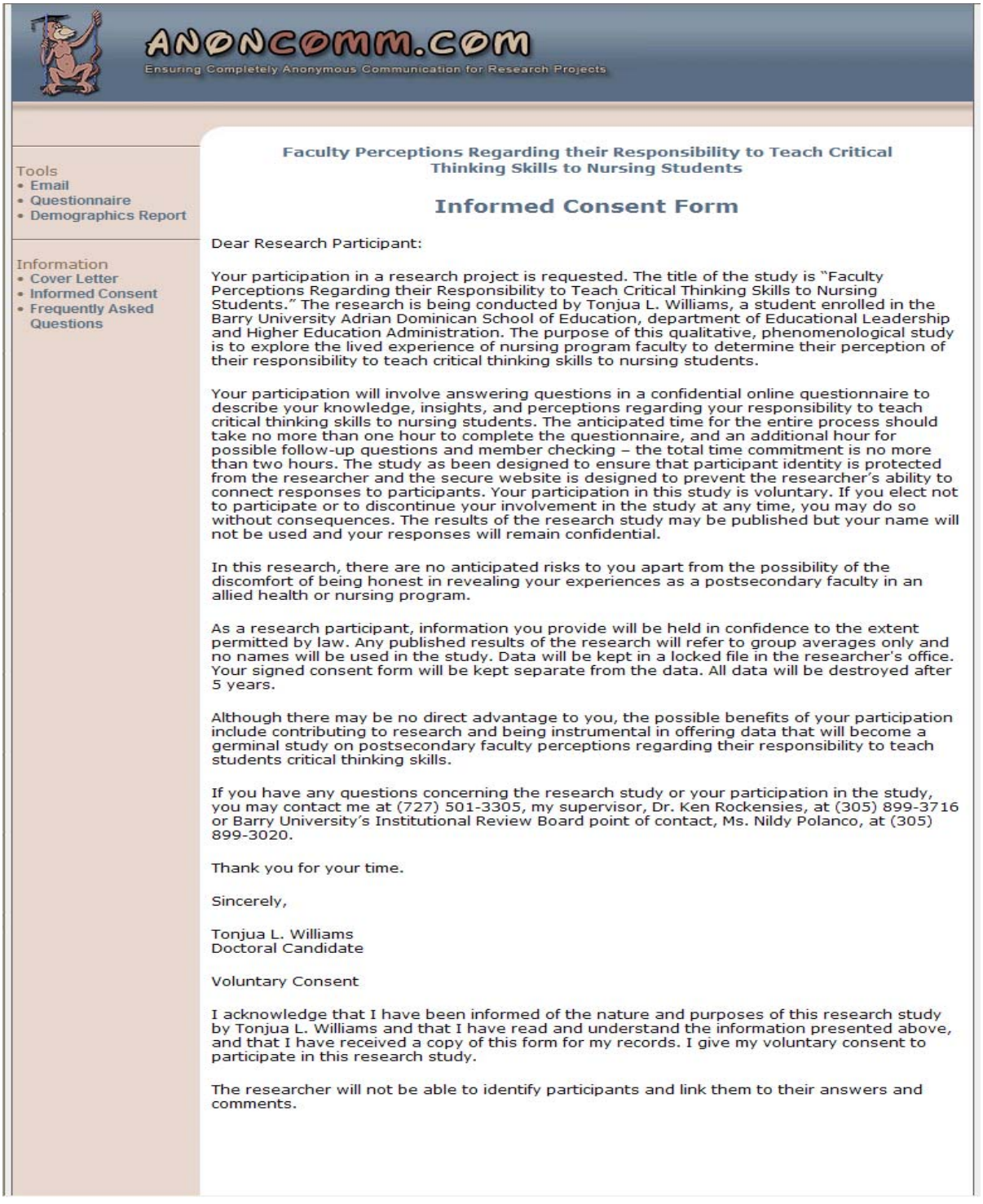
APPENDIX D

Online Research Information



APPENDIX E

Online Informed Consent Form



ANONCOMM.COM

Ensuring Completely Anonymous Communication for Research Projects

Tools
- Email
- Questionnaire
- Demographics Report

Information
- Cover Letter
- Informed Consent
- Frequently Asked Questions

Faculty Perceptions Regarding their Responsibility to Teach Critical Thinking Skills to Nursing Students

Informed Consent Form

Dear Research Participant:

Your participation in a research project is requested. The title of the study is "Faculty Perceptions Regarding their Responsibility to Teach Critical Thinking Skills to Nursing Students." The research is being conducted by Tonjua L. Williams, a student enrolled in the Barry University Adrian Dominican School of Education, department of Educational Leadership and Higher Education Administration. The purpose of this qualitative, phenomenological study is to explore the lived experience of nursing program faculty to determine their perception of their responsibility to teach critical thinking skills to nursing students.

Your participation will involve answering questions in a confidential online questionnaire to describe your knowledge, insights, and perceptions regarding your responsibility to teach critical thinking skills to nursing students. The anticipated time for the entire process should take no more than one hour to complete the questionnaire, and an additional hour for possible follow-up questions and member checking – the total time commitment is no more than two hours. The study as been designed to ensure that participant identity is protected from the researcher and the secure website is designed to prevent the researcher's ability to connect responses to participants. Your participation in this study is voluntary. If you elect not to participate or to discontinue your involvement in the study at any time, you may do so without consequences. The results of the research study may be published but your name will not be used and your responses will remain confidential.

In this research, there are no anticipated risks to you apart from the possibility of the discomfort of being honest in revealing your experiences as a postsecondary faculty in an allied health or nursing program.

As a research participant, information you provide will be held in confidence to the extent permitted by law. Any published results of the research will refer to group averages only and no names will be used in the study. Data will be kept in a locked file in the researcher's office. Your signed consent form will be kept separate from the data. All data will be destroyed after 5 years.

Although there may be no direct advantage to you, the possible benefits of your participation include contributing to research and being instrumental in offering data that will become a germinal study on postsecondary faculty perceptions regarding their responsibility to teach students critical thinking skills.

If you have any questions concerning the research study or your participation in the study, you may contact me at (727) 501-3305, my supervisor, Dr. Ken Rockensies, at (305) 899-3716 or Barry University's Institutional Review Board point of contact, Ms. Nildy Polanco, at (305) 899-3020.

Thank you for your time.

Sincerely,

Tonjua L. Williams
Doctoral Candidate

Voluntary Consent

I acknowledge that I have been informed of the nature and purposes of this research study by Tonjua L. Williams and that I have read and understand the information presented above, and that I have received a copy of this form for my records. I give my voluntary consent to participate in this research study.

The researcher will not be able to identify participants and link them to their answers and comments.

APPENDIX F

Third Party Confidentiality Form

As a member of the research team investigating how faculty perceive their responsibility to teach students critical thinking skills, I understand that I will have access to confidential information about study participants. By signing this statement, I am indicating my understanding of my obligation to maintain confidentiality and agree to the following:

- I understand that names and any other identifying information about study participants are completely confidential.
- I agree not to divulge, publish, or otherwise make known to unauthorized persons or to the public any information obtained in the course of this research project that could identify the persons who participated in the study.
- I understand that all information about study participants obtained or accessed by me in the course of my work is confidential. I agree not to divulge or otherwise make known to unauthorized persons any of this information unless specifically authorized to do so by office protocol or by a supervisor acting in response to applicable protocol or court order, or public health or clinical need.
- I understand that I am not to read information and records concerning study participants, or any other confidential documents, nor ask questions of study participants for my own personal information but only to the extent and for the purpose of performing my assigned duties on this research project.
- I understand that a breach of confidentiality may be grounds for disciplinary action, and may include termination of employment.
- I agree to notify my supervisor immediately should I become aware of an actual breach of confidentiality or situation that could potentially result in a breach, whether this be on my part or on the part of another person.

_____	_____	_____
Signature	Date	Printed Name
_____	_____	_____
Signature	Date	Printed Name

APPENDIX G

Nursing Faculty Recruitment Manuscript

Dear Program Director,

Your participation in a research project is requested. The title "Faculty Perceptions Regarding Their Responsibility to teach critical thinking skills to nursing students" is a phenomenological study. The research is being conducted by Tonjua Williams; a doctoral student enrolled in the Barry University Adrian Dominican School of Education, department of Educational Leadership and Higher Education Administration. The aim of the research is to learn how faculty perceive their responsibility to teach students to think critically. This document is designed to provide you, as a program director, with an explanation of the research project and a manuscript guideline to recruit participants for the study. Thank you in advance for your willingness to identify potential participants for this qualitative research study.

For this study, as a program director in the nursing program at the *associate degree level*, your role is to identify full-time faculty on your staff with less than ten years of higher education teaching experience. Once eligible faculty are identified, I am asking that you communicate with qualified faculty without coercion and request them to volunteer to participate in the project by using the Manuscript to Recruit Faculty Participants (see below).

Manuscript to Recruit Faculty Participants

Using the manuscript below, please seek full-time faculty with less than ten years teaching experience and share the following information:

Your participation in a research project is requested. The title *Faculty Perceptions Regarding Their Responsibility to Teach Critical Thinking Skills to Nursing Students* is a phenomenological study. The research is being conducted by Tonjua Williams; a doctoral student enrolled in the Barry University Adrian Dominican School of Education, department of Educational Leadership and Higher Education Administration. The goal of the research project is to learn how faculty perceive their responsibility to teach students critical thinking skills.

This research project will be conducted via an online open-ended questionnaire using a secure website. The website has been developed to prevent the researcher from identifying participants and their responses. In accordance with these goals, the following process will be followed:

- *You will be asked to visit the researcher-developed website at **http://anoncomm.com/** to review a cover letter explaining the study.*
- *After reading the cover letter, you will be asked if you agree to participate in the study via the Inform Consent form by indicating "yes."*
- *You will then be directed to a log-in screen asking you to select a new identification and self-selected password.*
- *You will then be directed to log-in using your new identification and password to gain access to the demographics page and the online open-ended questionnaire*
- *If participants or researcher have additional questions, the website is designed to allow confidential interaction via the Internet using the following link*
- *The anticipated time for the entire process should take no more than two hours. Additional time may be needed should the researcher have questions or need clarification regarding participant responses.*
- *Your participation or decision not to participate in this study will not impact your employment, the courses you teach or your teaching schedule.*
- *This study will include eight fellow nursing program faculty members.*

APPENDIX H

Participant Recruitment Flyer

SPC selects Critical Thinking as Quality Enhancement Plan Topic for SACS Accreditation!

NURSING PROGRAM FACULTY – WE NEED YOU!

Your opinion matters! We are searching for eight (8) full-time faculty to provide their perspective regarding teaching critical thinking skills to nursing students via a secure website that will safeguard your identification.

If you decide to participate in this research, you will be asked to do the following:

- Visit a researcher-developed website at http://anoncom.com to review an explanation of the study. The password for initial access is "galaxy."

- If you agree to participate, you will need to indicate your intent to participate by selecting "yes" on the electronic Informed Consent. If you decide not to participate, you will respond by selecting "no" and proceed out of the website.

- Once you confirm your participation by selecting "yes" on the Informed Consent, you will then be asked to enter demographic information, select an artificial identification, and new log-in password to access the online open-ended questionnaire. You will also be asked to identify an email address frequently used by you to receive communication alerts from the.

- Lastly, you will also be given an opportunity to review the results of the study and provide feedback regarding the accuracy of the researcher's interpretation of the data.

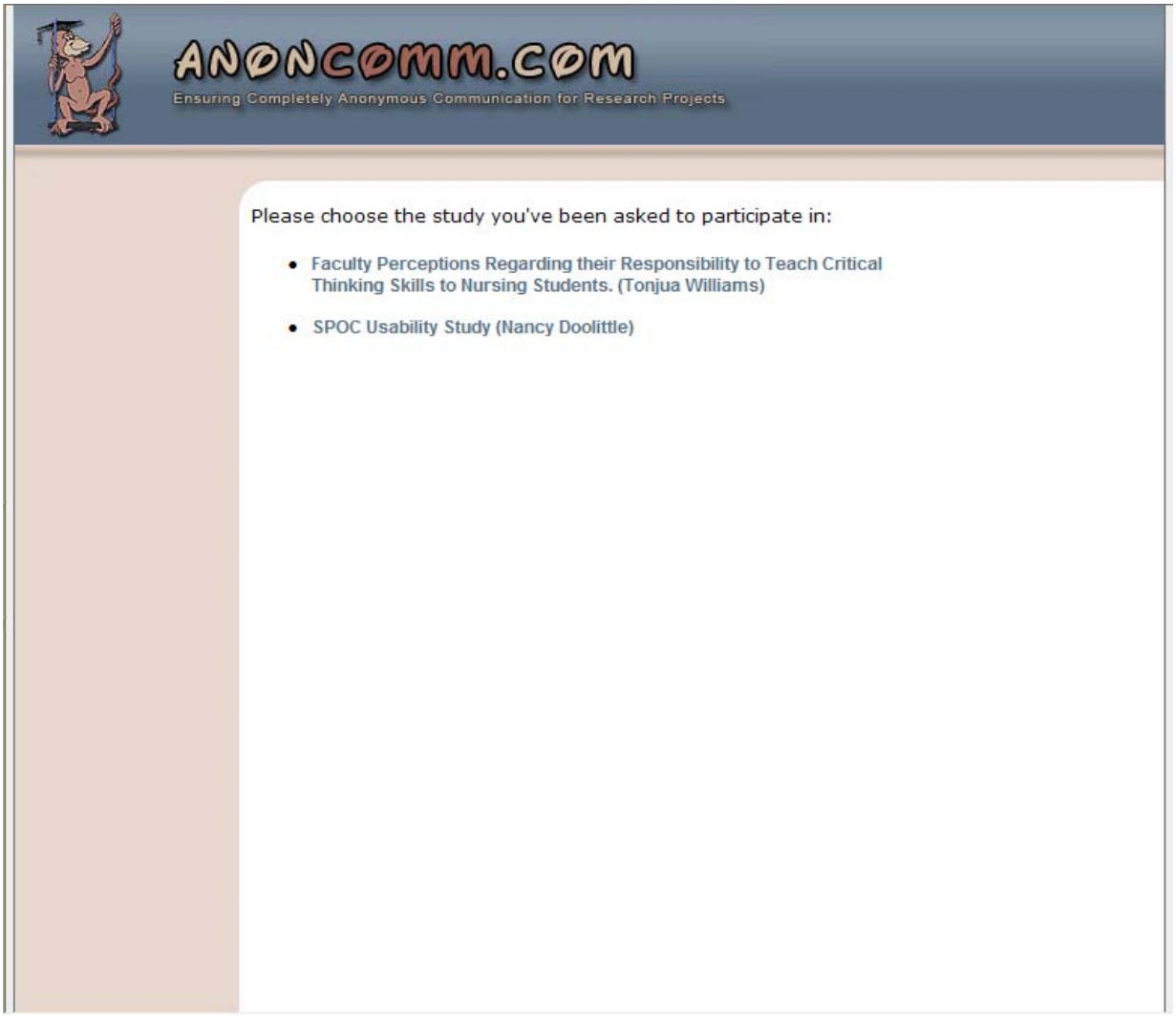
- The anticipated time for the entire process should take no more than one hour to complete the questionnaire, and one hour for possible follow-up questions and member checking – a total time commitment of no more than two hours. We anticipate the number of participants to be eight (8) out of thirty (30) full-time nursing program faculty.

- Your participation or decision not to participate in this study will not impact your employment, the courses you teach or your teaching schedule. You may withdraw your data from this study at anytime without consequence via the research website.

The researcher will not be able to identify participants or link them to their answers and comments. We look forward to learning about your perceptions regarding teaching critical thinking skills to nursing program students! Don't hesitate, only eight faculty members can participate!

APPENDIX I

Research Website



APPENDIX J

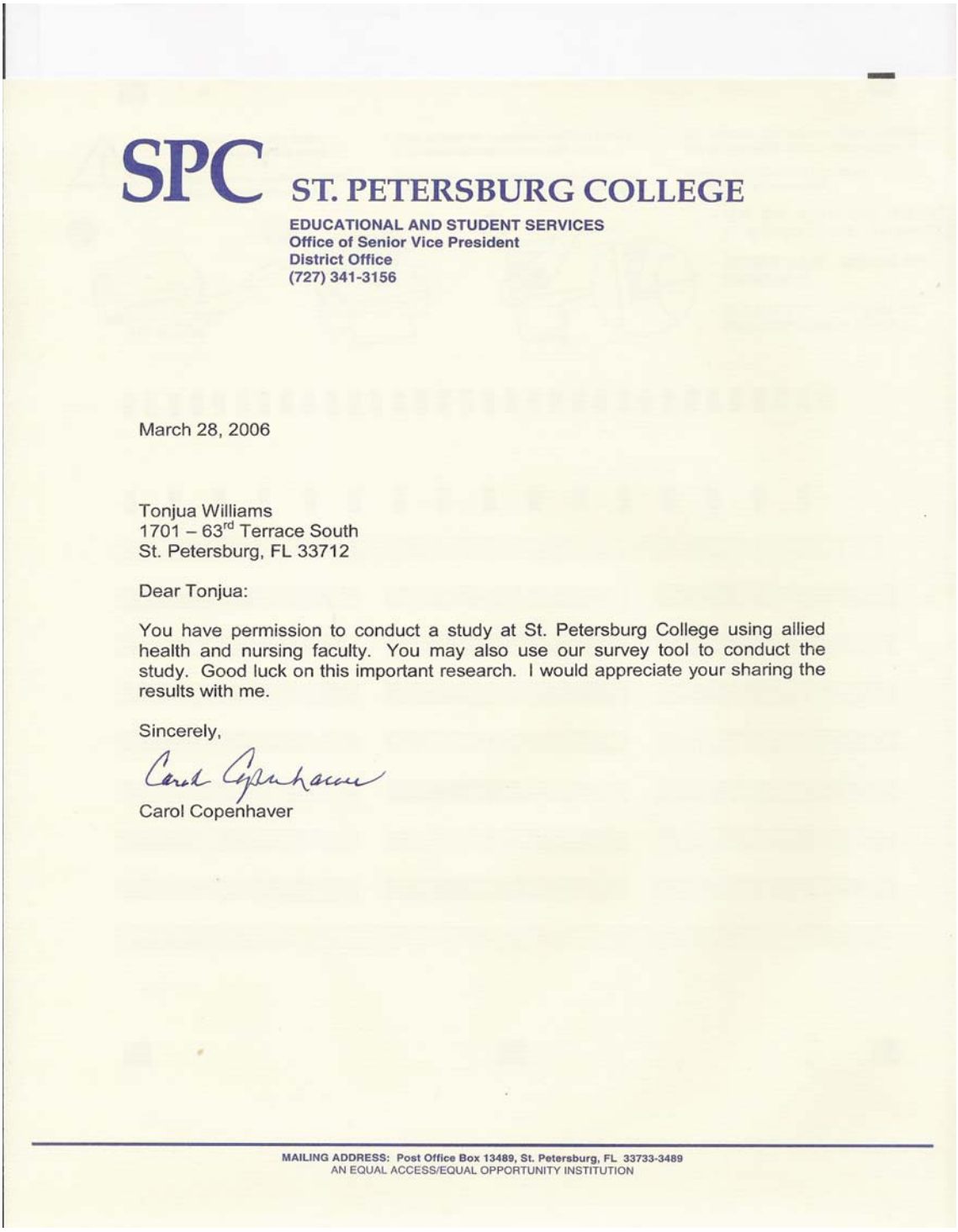
New and Existing Participant Log-in

APPENDIX K

Directions to Access Questionnaire

APPENDIX L

Institutional Approval to Perform the Study



SPC ST. PETERSBURG COLLEGE

EDUCATIONAL AND STUDENT SERVICES
Office of Senior Vice President
District Office
(727) 341-3156

March 28, 2006

Tonjua Williams
1701 – 63rd Terrace South
St. Petersburg, FL 33712

Dear Tonjua:

You have permission to conduct a study at St. Petersburg College using allied health and nursing faculty. You may also use our survey tool to conduct the study. Good luck on this important research. I would appreciate your sharing the results with me.

Sincerely,

Carol Copenhaver

Carol Copenhaver

MAILING ADDRESS: Post Office Box 13489, St. Petersburg, FL 33733-3489
AN EQUAL ACCESS/EQUAL OPPORTUNITY INSTITUTION

APPENDIX M

CT Interview Profile for Teachers and Faculty

Critical Thinking Interview Profile for Teachers and Faculty

Thank you for agreeing to this interview. The purpose is to look into your views of critical thinking. More particularly, the purpose is to determine the extent to which the tools and language of critical thinking have come to play an important role in the way you think about teaching and learning, and the way you structure your courses.

- What is critical thinking?
- When you were in school, did your teachers in school encourage you to think critically?
- Could you give me an example or two of how you came to learn about critical thinking?
- Are there any components of critical thinking? If so, what are they?
- If you were asked to analyze thinking, how would you do so?
- What standards do you use when you evaluate someone's thinking?
- How does critical thinking apply to the study of literature?
- How does it apply to the study of Civics and Government?
- How does critical thinking apply to the study of science?
- How do you foster critical thinking in the classroom (in general)?
- What is the most significant obstacle to bringing critical thinking more explicitly and more deeply into instruction?

APPENDIX N

CT Interview Profile for College Students

Critical Thinking Interview Profile for College Students

Thank you for agreeing to this interview. The purpose is to look into your development as a student and thinker. More particularly, the purpose is to determine the extent to which the tools and language of critical thinking have come to play an important part in the way you go about learning, in school and in everyday life.

- What is critical thinking?
- Are there any components of critical thinking?
- If so, what are they?
- If you were asked to analyze thinking, how would you do so?
- What standards do you use when you evaluate someone's thinking?
- What is your major and how does critical thinking apply to it?
- How does critical thinking apply to the study of Sociology and Anthropology?
- How does it apply to the study of the Arts?
- How does critical thinking apply to the study of science?
- How does critical thinking apply to the study of mathematics?
- How does critical thinking apply to the study of {insert subject}?
- Could you give me some examples of your use of critical thinking in your life? To what extent have your teachers encouraged you to think critically? Explain.

1 This protocol was developed by the Foundation For Critical Thinking, www.criticalthinking.org. cct@criticalthinking.org. Permission to use this protocol is granted to all those willing to share their results with us.