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Danette Kathleen Dutra

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The University of San Francisco

NURSE EDUCATORS' IMPLEMENTATION OF CONCEPT MAPPING,
CASE STUDIES, AND REFLECTIVE -THINKING EXERCISES IN
UNDERGRADUATE DIDACTIC NURSING COURSES AT
BACCALAUREATE SCHOOLS OF NURSING:
A QUALITATIVE STUDY

A Dissertation Presented
to
The Faculty of the School of Education
Learning and Instruction Program

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

by
Danette K. Dutra
San Francisco
December 2009

UNIVERSITY OF SAN FRANCISCO
Dissertation Abstract

Nurse Educators' Implementation of Concept Mapping, Case Studies, and Reflective-Thinking Exercises in Undergraduate Didactic Nursing Courses at Baccalaureate Schools of Nursing: A Qualitative Study

The pedagogies of concept mapping, case studies, and reflective-thinking exercises are associated with learner-centered education; they focus on the learner instead of the educator. Learner-centered pedagogies are believed to improve students' level of cognition. The purpose of this investigation was to examine the implementation strategies of concept mapping, case studies, and reflective-thinking exercises in didactic undergraduate nursing courses.

Purposeful sampling was utilized in this qualitative multisite case-study designed. For each of the four participants, three separate site visits were completed. Observations and brief postobservational interviews took place at each site visit. Transcribed data from interviews, observations, and pertinent course documents were imported into the computer program Nvivo8. Repetitive comparative analysis was utilized to complete the data coding process.

Research question one focused on the implementation strategies that were being implemented by my participants. For the pedagogy of concept mapping, two primary themes emerged: student-generated and instructor-generated concept mapping. The theme of student-generated concept mapping was divided into formative and summative mapping. The pedagogy of concept mapping was primarily utilized as a student-generated activity. Some mapping assignments were used as summative evaluation activities; however, the greatest amount of mapping was performed by the students and were ungraded.

The pedagogy of case study also offered two themes: formal and informal use of case studies. The theme of formal use of case studies yielded two subthemes; case studies used within the classroom and outside of the classroom. The informal use of case studies by my participants was the most utilized pedagogy. The retrieval of both spontaneously and preplanned case studies during a lecture was carried out by each of my participants multiple times during my observational site visits. Reflective-thinking exercises were found to be implemented via two methods: sharing reflections among fellow classmates and sharing reflections with only the instructor. The pedagogy of reflective-thinking exercises were found to be the least pedagogy utilized by my participants; however, it was found to have a contribution to the other two pedagogies in that reflection was addressed within both concept mapping and case studies.

Research question two investigated the perceived reasons the participants believed that the three pedagogies enhanced learning at a higher level of cognition. Two themes emerged; the first was that the students were *active* in the learning process. The second theme was that the pedagogies were believed to increase the student nurses ability to *integrate* material covered in the didactic setting to that of the clinical practice of nursing. It was perceived by the four participants that the mental activity, required by the three pedagogies, was important for the application of theory within a student nurses' clinical practice. Results of this investigation have led to an increased understanding of how and why these three pedagogies are utilized in undergraduate baccalaureate schools of nursing didactic courses.

This dissertation, written under the direction of the candidate's dissertation committee and approved by the members of the committee, has been presented to and accepted by the Faculty of the School of Education in partial fulfillment of the requirements for the degree of Doctor of Education. The content and research methodologies presented in this work represent the work of the candidate alone.

Danette Dutra

12-10-2009

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TABLE OF CONTENTS

	Page
TABLE OF CONTENTS	ii
LIST OF TABLES	v
LIST OF FIGURES	vi
CHAPTER	
I. INTRODUCTION	1
Statement of the Problem	1
Purpose of the Study	4
Background and Need	8
Educational Significance	11
Conceptual Framework	13
Research Questions	20
Operational Definitions	20
Summary	24
II. REVIEW OF LITERATURE	27
Nursing Education Revision	30
<i>National and State Support for Revision</i>	30
<i>Carnegie Foundation Study of Nursing</i>	31
<i>National Licensure Examination</i>	34
<i>Nurse Educators and Researchers Support.</i>	35
<i>Critical Thinking Connection</i>	39
<i>Learner-Centered Teaching Methods</i>	41
Pedagogies Associated with Higher Cognition	42
<i>Concept Mapping</i>	43
<i>Case Studies</i>	47
<i>Reflective-Thinking Exercises</i>	54
Summary	60

TABLE OF CONTENTS (continued)

CHAPTER	Page
III. METHODOLOGY	62
Research Design.	62
Sample	64
Recruitment	67
Protection of Human Subjects	68
Researchers Role	69
Data Collection Procedures	70
<i>Interviews</i>	72
<i>Observations</i>	72
<i>Course Documents</i>	73
Instrumentation	73
<i>Orientations to Teaching Questionnaire</i>	74
Research Questions Restated	78
Data Analysis	78
<i>First Loop of Data Analysis</i>	79
<i>Second Loop of Data Analysis</i>	80
<i>Third Loop of Data Analysis</i>	81
<i>Fourth Loop of Data Analysis</i>	81
Trustworthiness and Dependability	82
IV. RESULTS	84
Participant Description and Classroom Environment	85
Amy	85
Avery	86
Ivy	86
Yolonda	88
Research Question 1.	91
Concept Mapping.	92
<i>Student-Generated Concept Mapping.</i>	92
<i>Formative</i>	95
<i>Summative</i>	97
<i>Instructor-Generated Concept Mapping</i>	97
<i>Summary of Pedagogy: Concept Mapping</i>	99
Case Studies	100
<i>Formal Implementation of Case Studies</i>	101
<i>Within the classroom</i>	101
<i>Outside of the classroom</i>	104
<i>Informal Implementation of Case Studies.</i>	107
<i>Summary of Pedagogy: Case Studies</i>	108

TABLE OF CONTENTS (continued)

CHAPTER		Page
IV	RESULTS (continued)	
	Reflective-Thinking Exercises	110
	<i>Shared with Classmates</i>	110
	<i>Shared Exclusively with Instructor</i>	113
	<i>Summary of Pedagogy: Reflective-thinking</i>	114
	Summary Research Question One	115
	Research Question 2.	116
	<i>Students Active in Learning Processes</i>	117
	<i>Students Integrating</i>	120
	Summary Research Question Two	122
	Additional Findings	123
	Talk of the Day	123
	Quick-fire Challenge	125
	Summary	127
V	SUMMARY, LIMITATIONS, DISCUSSION, RECOMMENDATIONS, AND CONCLUSIONS	129
	Summary of Results	129
	Research Question 1	130
	Research Question 2	132
	Additional Findings	133
	Limitations	134
	Discussion	135
	Recommendations for Practice	140
	Recommendations for Future Research	144
	Conclusions	146
	Afterword	147
	REFERENCES	150
	APPENDIX A: Letter to Nursing Program Directors	156
	APPENDIX B: Letter to Potential Participates	158
	APPENDIX C: Demographic Information	160
	APPENDIX D: Letter of Consent	162
	APPENDIX E: Interview Protocol	165
	APPENDIX F: Observation Protocol	168
	APPENDIX G: Permission to use Questionnaire	171

LIST OF TABLES

TABLE		Page
1.	Demographic and Pseudonyms	66
2.	Data Collection Tools and Rationales	71
3.	Summary Data on Final Version of Questionnaire	75
4.	Factor Analysis Final Version of Questionnaire	77
5.	Participants Percentage Scores of Questionnaire	78
6.	Themes Research Question 1	91
7.	Participants Comments: Conceptual Framework	138

LIST OF FIGURES

FIGURE		Page
1.	Visual Representation of Chapter I	26
2.	Visual Representation of Chapter II	29
3.	Spiral Representation of Data Analysis	79

CHAPTER I

INTRODUCTION TO THE STUDY

Statement of the Problem

The practice of nursing is extremely complex. The typical registered nurse is engaged in a diverse, ever-changing professional environment on a daily basis, and, although each clinical situation offers some similarity to a previous one, each is unique and demands individual attention. In addition, the health-care environment—an acute-care hospital is a typical example—is often described as a complex adaptive system, that is, depending on how the individuals in any given situation respond, different outcomes may result. These outcomes in turn are believed to have limited predictability, further adding to the complicated nature of the environment (Plsek & Greenhalgh, 2001).

The adaptive and highly technical nature of the health-care environment, combined with the fact that clients in the 21st century are increasingly older and suffer from more complex disease processes, create an educational challenge for nurse educators. The reason for this educational challenge is twofold.

The first reason a challenge exists is that medical and nursing treatments can change, almost seemingly, overnight. It is impossible, however, to teach what might be the treatment or procedure of the future. Thus, nurse educators must prepare student nurses to be adaptive within their scope of practice. A second reason for the educational challenge is that nurse educators are unable to teach every possible combination of medical conditions with which clients might present. The response by some nurse educators to simply add more content to their courses, according to Ironside (2004), is not an appropriate one.

One answer, to the educational challenge that nurse educators face, lies in their ability to implement pedagogies that will maximize student nurses' capability to learn cognitively at a higher level. It is believed that this level of learning will allow them to make the necessary adaptations to their practice as health care advances and continues to become more complicated (Del Bueno, 2005; Ironside, 2004; Valiga, 2003; Walsh & Seldomridge, 2006). Thus, increasing higher level of cognitive learning is deemed necessary for the ultimate enhancement of registered nurses' practice (Allen, Rubenfeld, & Scheffer, 2004; Del Bueno, 2005; Ironside, 2004; Scheffer & Rubenfeld, 2000; Valiga, 2003; Walsh & Seldomridge, 2006).

Del Bueno (2005) stressed that student nurses are not being taught adequately how to practice in the fast-paced hospital environment of the 21st century. According to Tanner (2006), nursing schools need to not only teach students how to think on their feet but also teach nurses how to do so while moving those feet at a brisk pace. Thus, the environment in which student nurses are educated must be conducive to more than basic knowledge-level learning.

The classroom environment needs to facilitate learning that promotes a higher level of cognition: a level of cognitive attainment that reflects appropriately upon student nurses' ability to analyze, apply, evaluate, and reflect on their nursing practice. Some authors call this level of cognition an enhancement of critical-thinking skills (Del Bueno, 2005; Ironside, 2004; Valiga, 2003; Walsh & Seldomridge, 2006).

Nurse educators have embraced the idea that to achieve maximum educational benefit, they need to adopt teaching pedagogies that cultivate effective higher level thinking skills in their student nurses—thinking skills that will take them beyond nursing

school and into their nursing practice (Allen et al., 2004; Bastable, 2003; Del Bueno, 2005; Ironside, 2004; Scheffer & Rubenfeld, 2000; Valiga, 2003; Walsh & Seldomridge, 2006).

To foster higher level thinking skills in student nurses, key concepts such as meaningful learning, metacognition, problem solving, and critical-thinking enhancement are all believed to be essential. According to Ormond (2003), a pedagogical change that facilitates key concepts associated with higher level thinking skills is accomplished via the adherence to a learner-centered classroom environment rather than one that is instructor entered. Three pedagogies deemed learner centered and thus facilitative of higher level thinking are concept mapping, case studies, and reflective-thinking exercises (Bastable 2008; Ironside, 2003; Staib, 2003; Tanner, 2006; Walsh & Seldomridge, 2006).

Nurse educators bear the primary responsibility for providing society with nurses who can practice safely and effectively (August–Brady, 2005; Tanner, 2001). Nurse educators believe a key aspect to educating successfully nursing students is the ability to foster thinking skills that represent a higher level of cognition: a level of thinking that will enable student nurses to continue learning throughout their nursing practice. Student nurses who, upon graduation, are capable of monitoring their continued learning and base their practice on an accumulation of evidence that is current are considered to be safe and effective nurses (Del Bueno, 2005; Ironside, 2004; Valiga, 2003; Walsh & Seldomridge, 2006).

To that end, researchers have provided nurse educators with definitions of what attributes higher level thinking nurses possess and how they should practice. Preliminary studies also have offered insight into what types of teaching methods are desired for

higher level learning to be achieved. In addition, nurse educators have received suggestions on how to measure effectively the key outcomes associated with higher level thinking in student nurses (Scheffer & Rubenfeld, 2000; Staib, 2003; Walsh & Seldomridge, 2006).

Very little evidence, however, has been offered by nurse researchers as how to implement learner-centered pedagogies within a didactic educational setting. Neither has research offered specific examples of how to realize learner-centered pedagogies so that learning at a higher level of cognition can be facilitated to its maximum benefit. Consequently, pedagogies that are believed to achieve meaningful learning at a higher level have not been researched adequately (Angel, Duffy, & Belyea, 2000; August–Brady, 2005; Profetto–McGrath, 2005; Tanner, 2001). By focusing my research on the pedagogies being used by effective nurse educators, it was expected that specific methodologies will be identified as being instrumental in the cultivation of student nurses with higher level thinking. The three learner-centered pedagogies that were examined are concept mapping, case studies, and reflective-thinking exercises.

Purpose of the Study

The purpose of this study was to examine the teaching pedagogies of effective nurse educators who were identified as currently implementing progressive teaching methodologies. They have adapted their teaching strategies to take in to consideration the nurses' 21st-century practice. The specific pedagogies that are being implemented by the effective educators are concept mapping, case studies, and reflective-thinking exercises. To assist in the optimization of nursing education, the logical first step was to examine effective nurse educators in action.

Research has demonstrated that nurse educators need to incorporate teaching strategies that improve their students' higher level thinking ability or as often termed critical-thinking skill, which is a needed trait in nursing students. Otherwise, without this ability, future nurses might have difficulty demonstrating competency in the 21st-century health-care environment. Student nurses might even have difficulty passing their national licensure examination without higher level thinking ability (Del Bueno, 2005; Ironside, 2004; Valiga, 2003; Walsh & Seldomridge, 2006). One concept that is believed to be a key to improving student nurses thinking level is the implementation of a less traditional learner-centered pedagogy instead of the more traditional teacher-centered approach (Tanner, 2000; Valiga, 2003, Walsh & Seldomridge, 2006).

According to Ormrod (2003), learner-centered learning environments promote learning that is at the analysis, synthesis, and evaluation level of Bloom's taxonomy of cognitive educational objectives. At this level of learning, what is learned within the classroom setting is thought to be meaningful in that it is both at a higher level of cognition and also is associated with long-term recall. Learner-centered classroom activities, according to Bastable (2008), improve student's metacognitive ability. Therefore, meaningful learning at a higher level of learning is thought to be obtained.

Examples of pedagogies that are deemed to be learner-centered are concept mapping, case-study analysis, and reflective-thinking exercises. These pedagogies also are associated with the enhancement of student nurse awareness of their own learning process or metacognitive ability (Del Bueno, 2005; Ironside, 2004; Shell, 2001; Tanner, 2000, 2006; Valiga, 2003; Walsh & Seldomridge, 2006).

There is, however, a lack of research published in nursing journals that actually provides implementation strategies for these learner-centered pedagogies. Thus, the need to actualize the effective teaching strategies demonstrated by progressive nurse educators prompted the need for my study. The identified pedagogies were examined using the Information Processing Theory. Utilizing qualitative research methodologies, I investigated, observed, and reported on current teaching pedagogies of a select number of nurse educators. The selected nurse educators are employed as didactic lecturers in California baccalaureate schools of nursing. A focus on the observable implementation strategies was the main concern of my investigation; therefore, the data obtained from my observations were of primary importance.

I utilized a qualitative multisite case-study research design. A purposeful sampling of nurse educators who teach lecture courses at California baccalaureate schools of nursing lead ultimately to a participant population. Inclusion in the study was based upon two criteria. The first criterion was that the participant had been referred to me by an individual who is currently an administrator within a California baccalaureate school of nursing. The referral was based on the assumption that the participant is currently utilizing all three learner-centered pedagogies: concept mapping, case studies, and reflective-thinking exercises.

The second inclusion criterion was an inventory score on the Orientations to Teaching Questionnaire that identify the participant as primarily learner centered in their approach to teaching in a didactic educational setting. The Orientations to Teaching Questionnaire is a tool that was developed by Kember and Gow (1994) and has a purpose of identifying an instructor's orientation or approach to didactic instructions at a college

level. The two approaches identified are learning facilitation, which is associated with a learner-centered approach to teaching and knowledge transmission, which is associated with a more traditional teacher-centered orientation to teaching. The Orientations to Teaching Questionnaire is described in detail in chapter III.

Selection of participants was purposeful in that they were identified as educators who are implementing pedagogies that foster meaningful learning at a higher level of cognition. Participants were identified by the fact that they are implementing the use of current teaching tools that are not reliant on *only* traditional teacher-centered lecture formats to present their course content. The use of concept mapping, case studies, and reflective-thinking exercises set them apart.

A link is presented between these learner-centered teaching tools and the conceptual framework of my study in chapter II. Other similar learner-centered methods of instructions were identified during this study and are presented in chapter IV.

The source of data collection was the participants themselves. Data were collected from each participant through observations, interviews, and pertinent course documents. One interview and three observations with debriefings were performed. Course documents added minimal additional perspective to the description of the pedagogies utilized by participants. Course documents include course syllabi, assignments, and methods of evaluation.

Protocols for the interviews and observations included a basic descriptive component. The primary data collection, however, focused on addressing the research questions of this study. Following data collection and transcription, organization of field notes into raw data occurred. Open coding was then performed. During this process, raw

data were reviewed analytically for repetition of key terms and phases, within each case and also between cases, so that themes were developed.

Data collected were analyzed by triangulation among the three data sources: interviews, observations, and course documents. Coding was accomplished by reviewing the data through the conceptual framework of the Information Processing Theory. The main categories coded, therefore, were considered contributory to facilitating meaningful learning at a higher level of cognition.

Results reflected coded data that had been collapsed into themes that represent findings as they related to the research questions. A computer software program entitled NVivo 8 was utilized as a method to easily categorization and then was used to present collected data. The specifics of NVivo 8 computer software are explained in chapter III.

Background and Need

Since the establishment of baccalaureate schools of nursing in the late 1950s, nurse educators have relied upon scholastic content that is based primarily on nursing textbooks (Ironside, 2004; Keating, 2006). Student nurses were graded on knowledge obtained from memorization of facts derived from textbooks and lectures. According to Ironside, the problem is not that the old pedagogies once relied upon are no longer sound techniques, but that nurse educators have not adapted their pedagogies to include newer methodologies that are believed to enhance their students' level of thinking.

The level of competency at which a graduate from nursing school must perform has been raised. This escalation of the competency level for nurses has been attributed to the increase in the complexity of patient conditions and the increase in technological skill required to practice in an adaptive health-care environment (Allen et al., 2004; Del

Bueno, 2005; Ironside, 2004; Scheffer & Rubenfeld, 2000; Valiga, 2003; Walsh & Seldomridge, 2006).

Nurse educators need to adapt their teaching pedagogies to include the facilitation of thinking at a higher level (Del Bueno, 2005). Even after the student nurse becomes a registered nurse, he or she will need to continue to enhance his or her competency in the health-care arena. Competency is accomplished via the continuance of self-regulated learning. This concept, also termed self-directed learning or metacognition, should be introduced initially to nursing students then subsequently nurtured by nurse educators in schools of nursing (Del Bueno, 2005; Ironside, 2004; Valiga, 2003; Walsh & Seldomridge, 2006). The utilization of learner-centered teaching pedagogies is associated with the continuance of self-directed, meaningful learning (Angelo, 1995; Ironside, 2003; Ormrod, 2003).

The responsibility of providing society with care from competent nurses lies with schools of nursing, nurse educators, hospital administrators, and the National Council of State Boards of Nursing (NCSBN). To ensure that nurses are competent to practice, the NCSBN requires that all student nurses (those who have graduated from an accredited school of nursing) pass that state's licensure examination. This assessment is measured by a tool designed and implemented by the NCSBN and is called the National Council Licensure Examination (NCLEX).

The NCLEX is an examination that requires potential registered nurses not only to recall learned knowledge but also to be able to evaluate, apply, and synthesize complicated simulated patient scenarios and then answer questions appropriately. Much the same is expected of them when they begin their nursing practice. In both situations,

meaningful learning at a higher level of cognition needs to have occurred for the potential registered nurses to be successful (American Association of Colleges of Nursing (AACN), 1998, 2009).

In June 2005, the Board of Registered Nursing (BRN) in the state of California published a forecast of future nursing supply and demand. It was projected that by the year 2010, California will experience a shortage of 3,347 registered nurses; by the year 2020, the gap between the number of registered nurses needed and the amount of registered nurses that will be available will be greater than 50,000 (California Board of Registered Nursing, 2005). These data are based upon the assumption that all graduates of California schools of nursing will pass the state licensure examination. Therefore, if the actual number of students who pass the state licensure examination is less than the total number who graduated from schools of nursing, there will be an even greater nursing shortage. In 2005, pass rates at schools of nursing in the Central California region ranged from 75% to 89%. This 11% to 25% failure rate represents 70 to 150 potential nurses who were not able to practice nursing (San Joaquin Valley Health Consortium, 2005).

The primary goal of California schools of nursing and nurse educators is to provide society with competent registered nurses who not only can pass the NCLEX but also can practice the art of nursing with entry-level skill. Through the accumulation of clinical experiences, each novice nurse ultimately will extend his or her entry-level practice to a more advanced professional practice. The newly licensed nurse will achieve an advanced practice level by maintaining an acute awareness of the complex health-care environment that his or her practices in and by consistently regulating his or her own

meaningful learning through an established metacognitive-skill base established in nursing school.

The urgency to provide student nurses with the tools necessary to both pass the state licensure and then practice in the health-care field of the 21st century is reflected in the substantial amount of research on this subject represented in nursing literature (Del Bueno, 2005; Staib, 2003; Walsh & Seldomridge, 2006). This research suggests that without effective teaching pedagogies that enhance student nurses' thought processes, schools of nursing will be unable to produce nurses who can pass the NCLEX.

Moreover, not only will new graduates be unable to demonstrate competency at the entry level of practice but also will find it difficult to maintain competent practice levels without increased higher level thinking skills. Examining the pedagogies linked to higher level thinking, therefore, is an important step in the process of educating future registered nurses.

Educational Significance

Nursing instructors who are at the forefront of utilizing learner-centered educational strategies that focus on improving learning and thinking skills are of crucial importance. Without the knowledge of how these effective pedagogical components are implemented, the quest to disseminate effective teaching strategies to other nurse educators is at risk of being stifled. The goal of my study was to uncover the pedagogical methods being employed by those nurse educators who have achieved a learner-centered classroom environment. They were identified as lecturers who prescribe to the premise that the teaching methods of concept maps, case studies, and reflective-thinking exercises are needed to improve higher level thinking or as often termed critical-thinking skills

(Bastable, 2008; Del Bueno, 2005; Staib, 2003; Tanner, 2006; Walsh & Seldomridge, 2006).

A growing body of research is devoted to the need of teaching nursing students how to be critical thinkers. A skill, according to nurse leaders, that is necessary to be competent within the complex health-care environment where nurses practice (Del Bueno, 2005; Staib, 2003; Walsh & Seldomridge, 2006). A need exists, therefore, for nurse educators to improve their students' critical-thinking or higher level thinking skill. To accomplish the fostering of higher level thinking skills, the didactic component of nursing courses needs to be modified. The modification needed is a shift from the focus being placed on the teacher teaching to the learner learning (Ironsides, 2003; Staib, 2003; Valiga, 2003).

A concept pointed out by Angelo (1995) is that students' critical-thinking capabilities are enhanced if they have a voice in the learning process. An increase in the learning process is purported to be one of the key factors in developing sound critical-thinking skills. A voice in the learning process is the bases of a learner-centered educational environment (Angelo, 1995; Bastable, 2008). Three pedagogies associated with a learner-centered classroom environment are concept mapping, case-study analysis, and reflective-thinking exercises (Diekelmann 2001; Ironsides, 2001, 2003; Kern, Bush, & McCleish, 2006; Staib, 2003; Van Erden, 2002; Yoo & Yoo, 2003).

A qualitative multisite case investigation helped provide a description of the actual implementation strategies employed by effective nurse educators. It was an appropriate method of enlightenment. A qualitative multisite case-study approach did provide some insight into how effective nurse educators are utilizing the learner-centered

methods of concept maps, case studies, and reflective-thinking exercise. The study attempted to answer the question of *how* they are utilizing these three learner-centered pedagogies to enhance learning at higher cognitive level.

Conceptual Framework

The theoretical webbing that holds together the belief that higher level thinking or what is also referred to, by nursing theorist, as critical-thinking skills is presented within this section. Hence, the explanation of the conceptual framework - The Information Processing Theory - that guided this study is given below.

According to cognitive psychologists, the achievement of both meaningful learning and higher level cognition by students can be enhanced if educators are aware of key concepts that are believed to facilitate that level of learning (Marzano, 2001). It would behoove nurse educators to become aware of not only the definition associated with higher level learning and the evaluation methods proposed but also how best to teach students to obtain these higher level thinking skills. Although the pedagogies of concept mapping, case studies, and reflective-thinking exercises are believe to be learner-centered and thus designed to enhance cognitive thinking skills in student nurses, the specific implementation strategies associated with them are lacking in nursing literature.

To establish an understanding of how effective nurse educators' are implementing the three teaching strategies, this study utilized the theoretical construct of the Information Processing Theory (Ormrod, 2003). The Information Processing Theory has been cited as a framework of learning. It is associated with the facilitation of a learner-centered environment; an environment that ultimately foster thinking at a higher level of cognition (Marzano, 2001; Ormrod, 2003).

The Information Processing Theory is the construct by which my study attempted to conceptualize the teaching pedagogies of participants in my study. The conceptual framework was not meant to be used as an evaluation tool of participants' pedagogies; instead it was employed as a method to describe the implementation strategies utilized by effective educators and the reasoning behind their utilization. The link between the conceptual framework of this study and the learner-centered pedagogies of concept mapping, case studies, and reflective-thinking exercises are detailed within the review of literature chapter of my study.

The Information Processing Theory is a collection of concepts that has its roots within cognitive psychology. It owes its inspiration to such noted psychologists as Piaget, Vygotsky, and Ausubel (Ormrod, 2003). The Information Processing Theory has a strong foundation within constructivism, and, although it pertains to enhancing learning, it serves as a guide upon which instructors base their teaching pedagogies (Ormrod, 2003).

The focus on a learner-centered learning environment has evolved from the underpinnings of the Information Processing Theory (Ausubel, 1963; Ormrod, 2003). If an educator is implementing within his or her instructional methodology the key components of the Information Processing Theory, a learner-centered environment is created (Ausubel, 1963; Marzano, 2001; Ormrod, 2003). A learner-centered learning environment, as previously mentioned, is essential for student nurses to learn at a higher cognitive level (Del Bueno, 2005; Ironside, 2004; Shell, 2001; Tanner, 2000, 2006; Valiga, 2003; Walsh & Seldomridge, 2006).

There are *six key* components to the Information Processing Theory. Each of the six components of the Information Processing Theory acted as a framework to view the

specific teaching methods employed by the studies participants. The six key components, therefore, offered interpretation of the pedagogies employed by my participants; they provided substantiation to the reasons why specific teaching techniques are employed by those nurse educators who have been identified as implementing effective teaching pedagogies in California baccalaureate schools of nursing. The specific teaching pedagogies that were examined within the context of the Information Processing Theory are concept mapping, case studies, and reflective-thinking exercises.

The *first key* component is that, in order for meaningful learning to be achieved, students must be able to relate the new material being learned to previous schema. Nurse educators who deliberately link knowledge learned in previous courses with current course material have chosen to adhere to the concept of linking schemas (Bastabel, 2003, 2008). Nurse educators' who attempt to link schema learned in a clinical setting to the didactic learning environment and vice-a-versa also are incorporating this same principle (Bastabel, 2003, 2008). According to Ormrod (2003), this linking of schema is essential for lasting learning to be achieved. Teaching strategies such as scaffolding and think-aloud exercises are instrumental in helping students at this point in the learning process (Ormrod, 2003; Shimamura, 2000). Both teaching strategies of scaffolding and think-aloud exercises are incorporated into the implementation of concept mapping, case studies, and reflective-thinking exercises.

The *second and third key* components are that the new concept being presented must be organized in its delivery and that it must be presented at the appropriate education level for the students. Not only does the presentation of content during a lecture have to be organized, but also all other aspects of an effective nurse educator's

course must be congruent. For example, the course syllabus, evaluation procedure, and Blackboard® or any other web-enhanced course-management system must all be in sync for the learner-centered environment to be effective (Bastabel, 2003, 2008).

The *fourth key* component, in the Information Processing Theory, is that students can only handle a given amount of new material at a time. If too much material is presented at one time, a situation known as cognitive overload may occur (Bastable, 2003, 2008). Often didactic nursing courses are 3 hours long. Given the comprehensiveness of the material covered in most nursing classes and the length of time students are in class, cognitive overload is all but guaranteed without some sort of varied teaching approach. The effective nurse educator attempts to diversify the method of content delivered thus lessening cognitive overload (Bastabel, 2003, 2008).

The *fifth component* stipulates that what is learned by the student must be constructed by the student not simply derived from the environment. The *sixth and last* key component is that students need to be active in the learning processes. The final two components are considered necessary to the enhancement of students' awareness of how they learn, which in turn improves their metacognitive capability (Ormrod, 2003; Shimamura, 2000).

Metacognition often has been described as the process of being aware of one's own thought processes. The implication of encouraging students to become responsible for the monitoring of their own learning places the focus on the student instead of the teacher, which is believed to be learner centered. The transfer of responsibility in and of itself constitutes a higher level of cognition. The self-control aspect of the learning process allows students to seek out and work through cognitively weak areas of their

comprehension (Ausubel, 1963; Marzano, 2001; Marzano et al., 1988). The ability of students to evaluate what and how they think establishes a means by which they become lifelong learners, which all nurses ultimately must accept as their destiny (Del Bueno, 2005; Ironside, 2004; Marzano et al., 1988; Young & Paterson, 2001).

Among other pedagogies, the teaching methods of concept mapping, case studies, and reflective-thinking exercises are believed to assist nurse educators in allowing student nurses actively to create their own knowledge base (Valiga, 2003). When the student creates the knowledge himself or herself rather than the instructor simply telling him or her what he or she need to know, learning is believed to be enhanced.

The use of case studies, concept maps, or reflective-thinking exercises as a means by which to present a lesson allows students to make their own decisions regarding a plan of care for a patient. An effective nurse educator has a well-thought-out presentation planned for his or her students so that they are able to arrive at an appropriate plan of care. The next step an effective educator might take is to have the student nurses verbalize exactly how they thought through their plan of care. Thus, students acknowledge their own leaning process (Daley, Shaw, Balistreri, Glasenapp, & Piacentine, 1999; Shell, 2001; Tanner, 2000; Valiga, 2003).

According to Marzano et al. (1988) and Ormrod (2003), key pedagogies that an instructor should implement to enhance metacognitive skills include deliberate planning of activities that are designed to make the students question, analyze, and evaluate a given concept or process. The instructor's facilitation of this metacognitive process is an absolute necessity the student, however is the center of the process.

An example of one teaching tool that emphasizes student learning within a lecture course would be to use both case studies and reflective-thinking exercise. Ironside (2005) used what she termed Narrative Pedagogy to think reflectively through a clinical situation during a lecture. Narrative Pedagogies utilizes both case studies and reflective thinking to stimulate higher level learning. Ironside believed the telling of a story via a reflective process allows the facilitation of student nurses to think about a series of actions. The story is predesigned by Ironside to address a specific message she wanted to make a point of. This metacognitive process is learner centered in that the student is active in the processing of learning (Ausubel, 1963; Ironside, 2005; Marzano, 2001; Marzano et al., 1988; Ormrod, 2003).

When designing curriculum to include all of the thinking processes, the instructor should first establish the key concepts and principles that need to be learned by the students. Therefore, the memorization type of teaching strategy employed by some nursing educators is not sufficient. It is not feasible to teach all the necessary content that student nurses need to know; therefore, instructors must concentrate instead on enhancing each student's thinking skills that ultimately will provide them with the tools to think through future complex situations (Del Bueno, 2005; Ironside, 2004; Valiga, 2003; Walsh & Seldomridge, 2006).

The ideology of enhancing student nurses metacognition explicitly pertains to the education of student nurses. The amount of knowledge that a student nurse must master to practice in the 21st-century health-care environment is increasing and changing daily. Therefore, according to Ironside (2004), nursing instructors need to stop adding content

to an already packed curriculum and instead teach student nurses how to think beyond what content there is time to present.

The importance of the Information Processing Theory upon instruction is the idea that for teachers to be effective they must possess knowledge regarding how to facilitate their students' thinking processes. Therefore, teachers' own self-regulation skills are instrumental in the ability to teach effectively. The role of a teacher is similar to that of the learner, the difference being that the teacher is a master or expert at the learning process (Marzano et al., 1988).

The primary role of the teacher, in a learner-centered course, is that of a mediator. An effective nurse educator initially makes an attempt to correlate previously learned behavior to new subject matter in such a manner that the student's cognitive process is able to make a link. Then the mediator role that an effective teacher plays at times may take on numerous forms, but the most important of these should be that of example setter. For instance, when teachers use the "think-aloud" strategy to model how they themselves have linked a process cognitively, they are role modeling effective thinking for their students (Marzano et al., 1988; Ormrod, 2003). The nursing instructor who demonstrates how he or she has come to a conclusion regarding a specific nursing action is role modeling for students. The use of all three pedagogies -- concept mapping, case studies, and reflective-thinking exercises-- are examples of appropriate teaching strategies to facilitate this link within nursing students.

Effective nurse educators, who realize the importance of how information is processed and have an understanding of learning phases, are a step ahead of other nurse educators when it comes to implementing teaching strategies that lead to thinking at a

higher level of cognition. They also are establishing a method for student nurses to continue learning throughout their career. The use of the Information Processing Theory allowed for the identification of the reasoning behind the methodologies employed by participants in my study. The framework offered a conceptualization of how the effective nurse educators within this study were implementing the pedagogies of concept mapping, case studies, and reflective-thinking exercises.

Research Questions

1. How are effective nurse educators implementing the pedagogies of concept mapping, case studies, and reflective-thinking exercises in undergraduate didactic courses?
2. How do effective nurse educators perceive that these pedagogies are enhancing learning at a higher level of cognition?

Operational Definitions

The following terms are operationally defined. The explanation of each term pertains to the meaning by which it is to be viewed within my study as there may be other ways to define these terms.

Case Study. A preplanned organized presentation of an unfolding real-life situation that a nurse might experience within a clinical environment. It must be well-designed and should address the key concepts pertinent to the content scheduled to be covered during that class meeting. The case study is discussed and comments made by both students and the instructor so that the analysis of scientific rationales may be address regarding the case in question. Bringing the actual clinical aspects of nursing practice into the classroom setting is the goal of case study use in the didactic setting (Bastable, 2008).

Concept Mapping. The process by which a nursing topic or situation is illustrated visually. The visual conceptualization offers an opportunity to substantiate the multiple variables of a given health-care situation so that a learner can begin to understand the dynamics associated with all aspects of that clinical situation (Keating, 2006).

Effective. The term effective, related to my investigation, pertains to enhancement of meaningful learning at a higher cognitive level (Keating, 2006).

Effective Nurse Educators. Effective nurse educators are applying aspects of the “Information Processing Theory.” Effective nurse educators are facilitators in the learning process; they not only are knowledgeable about nursing content but also have an understanding of learning theories and are able to design pedagogies that are focused on learning at a higher cognitive level (Keating, 2006).

Effective nurse educators also, according to Novonty (2006), design pedagogies that are focused at a metacognitive level, thus enabling nurses to be life-long regulators of their learning process. Three pedagogies that are believed to be utilized by effective nurse educators are concept mapping, case studies, and reflective-thinking exercises.

Higher Level Thinking. An individual who is believed to be demonstrating a higher level thinking processes is seen as a person who has gone beyond rote memorization of course content and has reached, at least, the analysis level of Blooms Taxonomy of learning domains (Ormrod, 2003) .

Knowledge Transmission. One of two orientations or approaches to teaching that is identified by the Orientations to Teaching Questionnaire. The subscales of the Knowledge Transmission orientation are training for a specific role, greater use of media, imparting information, and knowledge of subject. An educator who scores a

higher percentage of points in this orientation than in the Learning Facilitation orientation is believed to be primarily teacher-centered in his or her approach to teaching at the college level (Kember & Gow, 1994).

Learner-centered instructor. A learner-centered instructor is said to have designed an educational approach to teaching that allows students to share in the responsibility and process of how and what they are taught (Ormrod, 2003). An educator who is learner-centered in his or her approach to teaching utilizes active educational pedagogy. Active educational pedagogies such as concept mapping, case studies, and reflective-thinking exercises are examples. One example would be an instructor who instead of lecturing about a specific content area works with the students to create a concept map during class that explains and relates all the interrelated concepts of that topic. The classroom might appear unorganized. On the contrary, however, the instructor has specific plans that allow learning to unfold with less teaching and more actual learning being accomplished. Learner-centered classrooms are created by involving the students in the learning process rather than simply lecturing to them as the only teaching method (Bastable, 2008; Keating, 2006).

Learning Facilitation. One of the two orientations or approaches to teaching that is identified by the Orientations to Teaching Questionnaire. The lecturer who scores a higher percentage of points in this approach to teaching of a college-level didactic course rather than in the Knowledge Transmission orientation is believed to have an approach that is learner centered. The subscales are identified as problem solving, interactive teaching, facilitative teaching, humanistic interest, and motivator of students (Kember & Gow, 1994).

Orientations to Teaching Questionnaire. A questionnaire designed to identify the teaching approaches or orientations of lecturers who teach at a college level. The questionnaire identifies two orientations. The two orientations are Learning Facilitation and Knowledge Transmission. An educator may score points in both orientations. A higher percentage, however, in one or the other orientations implies a greater percentage of orientation to that particular approach to teaching (Kember & Gow, 1994). Within my study, the questionnaire was used as an inclusion criterion.

Pedagogy. Pedagogy is defined as the method by which an educator presents or delivers course content to students. It is viewed as a sequential preset method of relaying desired knowledge to a learner (Ormrod, 2003). According to Keating (2006), pedagogy is defined as “the art, science or profession of teaching” (p. 331).

Reflective-thinking Exercise. A pedagogical strategy that requires learners to reflect cognitively on behavior that takes place during nursing practice. It offers an in-depth, often emotional, approach to discussing specific nursing topics or situations. It allows for the learners to practice thinking in a safe and relaxed environment. Both verbal anecdotal exercises carried out during class and written journaling are seen as the facilitation of learners ability to think about their thinking. The implementation of reflective-thinking exercises are seen within a variety of pedagogies, including case studies and concept mapping (Bastable, 2008; Keating, 2006).

Teacher-centered Instructor. An instructor who is instructor-centered has an educational approach that predominantly provides instructors with control of how and what is taught (Ormrod, 2003). An example would be an instructor who predominantly relies on traditional lectures with Power Point ® presentation to impart content. The

learning in a teacher-centered classroom is very structured (Bastable, 2008; Keating, 2006).

Summary

This chapter initially presents the fact that health care in the 21st century is a dynamic environment that requires nurses to possess cognitive and technical skills that constantly will need to be updated. Also, the complexity and uniqueness of each hospitalized individual contributes to the difficulty nurse educators are faced with when trying to decide what content to present comprehensively and what aspects to focus on to a lesser degree. Because it is impossible to prepare a student nurse for every possible disease process that he or she might be responsible for in practice; it is critical that nurse educators develop pedagogies that capitalize on the limited time available during a didactic lecture course.

The background and need related to this problem is explained along with the educational significance. It is believed that to provide nursing students with the appropriate tools both to pass the NCLEX and ultimately practice nursing in the 21st - century health-care environment, nurse educators need to adapt their teaching pedagogies so that thinking and ultimately learning occur at a higher cognitive level (Allen et al., 2004; Del Bueno, 2005; Ironside, 2004; Scheffer & Rubenfeld, 2000; Valiga, 2003; Walsh & Seldomridge, 2006). The type of methodologies believed to be associated with establishing educational patterns that will provide student nurses with not only the ability to apply learned knowledge to health-care situations while in nursing school but also the capability to apply learned strategies continually throughout their professional career are

associated with the theoretical concepts of the Information Processing Theory (Ironsides, 2004; Marzano et al., 1988; Ormrod, 2003).

The reason the Information Processing Theory was utilized as the means by which to view how the effective nurse educators, within this study, are implementing pedagogies in an undergraduate didactic nursing course was explained. The educational significance of this study stems from the premise that the national licensure examination that all nurses must pass is based on the assumption that candidates taking the exam are able to analyze systematically and respond to higher level cognitive type questions correctly. Ultimately the educational significance is that nurse educators are responsible for the education of potential nurses who will one day be taking care of patients in a complex adaptive environment. According to NCSBN and American Association of Colleges of Nurses (AACN), an update in pedagogies is necessary to assure that safe and successful nurses are taking care of clients (AACN, 1998, 2009; Del Bueno, 2005; Ironsides, 2004; Keating, 2006; Oermann & Gaberson, 2006; Scheffer & Rubenfeld, 2000; Valiga, 2003; Walsh & Seldomridge, 2006).

In the next chapter, a review of current literature related to my study is provided. Also, within this chapter a presentation of studies that link the conceptual framework for this study with research that supports its use as a framework for nurse educators will be offered. Within the third chapter, the methodology used to investigate the research questions is presented. Results from my research are specified in chapter IV, and a discussion of the results is presented in chapter V. Figure 1 is a visual representation of Chapter I and is presented on the following page.

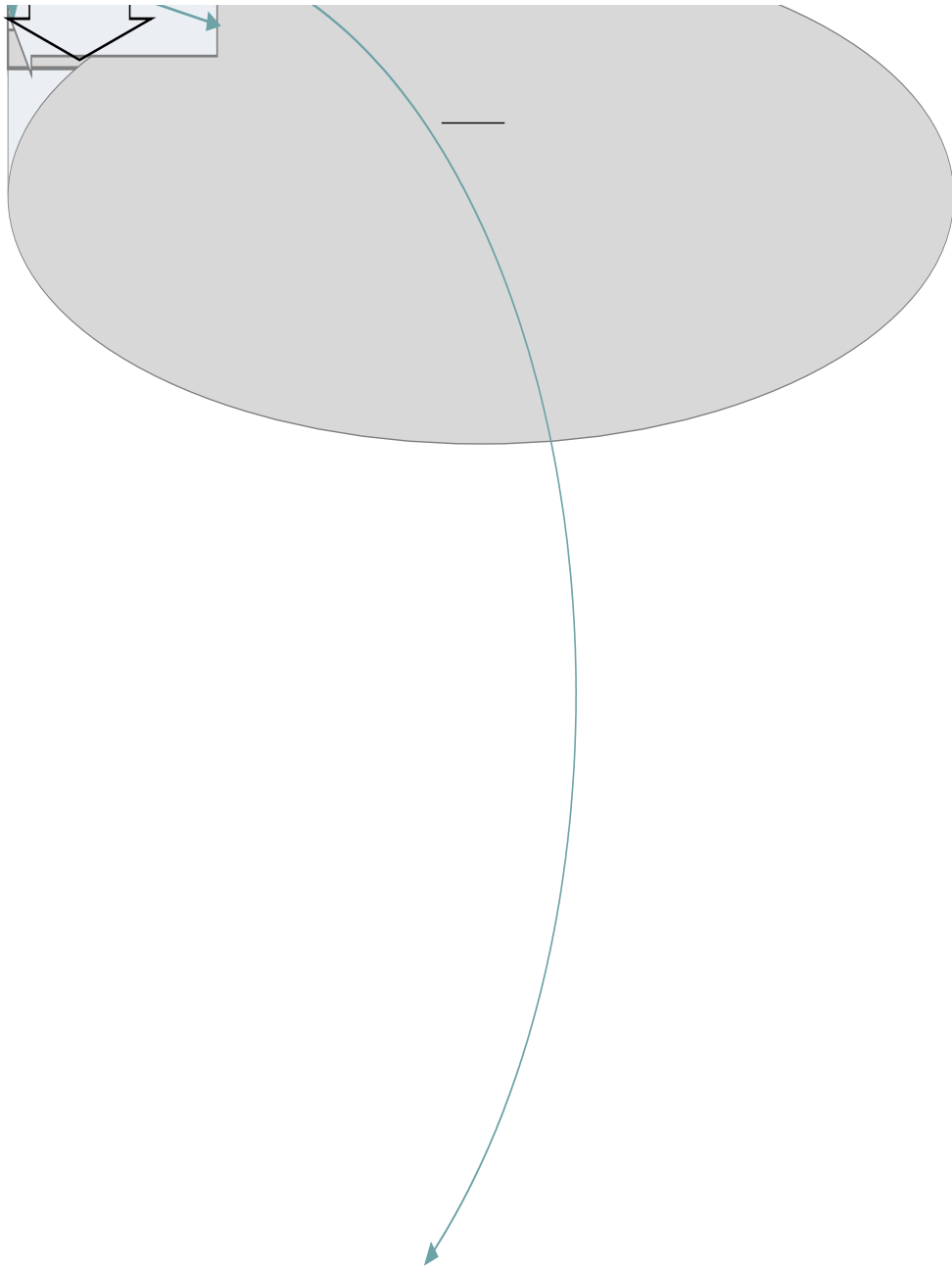


Figure1. *Visual Representation of Chapter I*

CHAPTER II

REVIEW OF LITERATURE

A registered nurse's professional practice is multifaceted, requiring the balancing of scientific fact and the art of humane care. This multivariate nature of a registered nurse's practice may lead to a complex professional environment. A nurse, as a patient's chief advocate, must treat that patient holistically taking into account all aspects of his or her care. Physicians, on the other hand, primarily focus only on patient's medical needs, and other ancillary providers basically are concerned only with the particular facet of care they provide (Del Bueno, 2005; Plsek & Greehalgh, 2001; Valiga, 2003).

Thus, the nurse's role is unique in that his or her professional boundary can at times be blurred. Their definitive role is to provide care for their patients; the complex and dynamic nature of that care, however, can complicate their practice. This distinctive type of professional role and environment, one with changeability and complexity, creates a challenge for nurse educators (Del Bueno, 2005; Scheffer & Rubenfeld, 2006; Tanner, 2000, 2006; Valiga, 2003).

The purpose of my study was to investigate and then illuminate the pedagogies of nurse educators who are implementing teaching strategies that effectively prepare nurses for the 21st-century health-care environment. My study focused on those educators who have implemented pedagogies believed to promote higher-level thinking skills in their students. Such higher-level thinking skills are connected with increased critical-thinking and clinical competency (Del Bueno, 2005; Scheffer & Rubenfeld, 2006; Tanner, 2000, 2006; Valiga, 2003).

The lack of literature that clearly delineates the specific implementation strategies utilized by nurse educators who include the pedagogies of concept mapping, case studies, and reflective-thinking exercises in their undergraduate didactic courses, has instigated my research. No clear explanation of *how* the three pedagogies are being implemented is available and therefore is the focus of my research.

For cohesiveness, this chapter has been separated into two primary sections. Within the two primary sections, subsections are utilized for organizational purposes. The first section is a presentation of literature that supports the need for a revision within nursing education.

A focus on meaningful learning at a higher level of cognition is essential to revision. Within this section, a link is provided between thinking skills that are associated with learning at a higher level of cognition and what nurse leaders describe as “critical thinking.” The relationship between learner-centered teaching methodologies and learning at a higher level of cognition is presented.

The second primary section of this chapter contains information on three teaching methodologies considered to enhance nursing students’ learning. The literature within this section is representative of pedagogies that are purported to improve the thinking skills and clinical competency of registered nurses. The three pedagogies are believed to be learner-centered in that the students are active in the learning process. The three pedagogies presented are concept mapping, case studies, and reflective-thinking exercises. On the following page a graphic representation of this chapter is provided in Figure 2.



Figure 2. *Visual Representation of chapter II*

A link between the enhancement of higher levels of cognition and critical thinking follow. In the last subsection, I offer literature related to learner-centered pedagogies. The belief here is that pedagogies focused on learning instead of teaching are a means by which to enhance the education of student nurses.

National and State of California Organizational Support of a Revision

There are two accrediting organizations for schools of nursing. One is the National League of Nursing Accreditation Commission (NLNAC), and the other is the Commission on Collegiate Nursing Education (CCNE). Both of these accrediting organizations utilize the standards of CCNE's sister organization, the American Association of Colleges of Nurses (AACN), as guidelines for educating student nurses. These guidelines form a plan from which the two accrediting organizations evaluate schools of nursing for accreditation.

Therefore, the AACN's published standards constitute the curricular foundation for all accredited baccalaureate schools of nursing. The title of this set of guidelines is "The Essentials of Baccalaureate Education for Professional Nursing Practice," often referred to simply as "the essentials" (AACN, 1998, 2009; Keating, 2006; Oermann & Gaberson, 2006).

Within "the essentials," the AACN described four core competencies: critical thinking, communication, assessment, and technical skills. A section on the three specific pedagogies of concept mapping, case studies, and reflective- thinking exercises also are found within the document. It is assumed that the implementation of these teaching strategies is the proper approach to increasing higher levels of thinking. Learner-centered classrooms that utilize these three pedagogies are stressed as the means by which

graduates of baccalaureate nursing programs may attain a “higher level” of thinking (AACN, 1998, p.17, 2009).

A call for curriculum revision that specifically addresses the need to identify the most effective teaching modalities has been funded by the California Institute for Nursing & Health Care (CINHC). To that extent, grants are being awarded to those California schools of nursing that are willing to commit to research that leads to improved teaching practices (Goulette, 2008). As of November 2009, no investigative findings have been published. The project committee members of CINHC have identified the findings of Benner and Sutphen’s 2007 Carnegie Foundation for Advancement in Teaching as guidelines for improvement in nursing education.

Carnegie Foundation Study of Nursing Education

The Carnegie Foundation for the Advancement of Teaching (2007) has sponsored a study designed to examine the pedagogies of five professional disciplines. The professions represented within the study are that of a nurse, engineer, lawyer, medical doctor, and a clergyman. The primary purpose of the study was to investigate the pedagogies being implemented by effective educators within these five professions, an investigation that would lead to the improvement of all the professions’ teaching practices.

Dr. Patricia Benner and Dr. Molly Sutphen represent the nursing component of the research team. Eventually, a cross comparison of each of the professions will be completed. The findings of the investigation into the profession of nursing have just been published and are available as of December 2009. The book is co-authored by Benner, Sutphen, Leonard, and Day.

The research design implemented to investigate the profession of nursing was performed in two phases. The first phase was a qualitative research design, whereas the second phase was a descriptive survey approach (Benner & Sutphen, 2007; Benner et al., 2009; The Carnegie Foundation for the Advancement of Teaching, n.d.).

The first phase of study was completed by the research team in 2004 and 2005. Nine schools of nursing were examined. According to Benner and Sutphen (2007), these schools of nursing represented what is considered “excellent” schools of nursing (p. 103). The only criteria stated for the schools’ excellence rating was their successful pass rates on the national licensure examination. The type of nursing programs represented varied from associate degree programs to master’s entry-level programs. Of the nine schools visited by the team, four were baccalaureate degree programs. Only one baccalaureate school—Samuel Merritt College in Oakland—was from the state of California.

During their visits to the nine schools of nursing, the research team conducted interviews and observations of teaching in action. Observations took place in both the didactic and the clinical setting. Interviews were carried out with students and teachers. Students were volunteers, and educators were defined as those instructors of key courses within that school of nursing’s curriculum. Observations of those same nurse educators were then completed. To increase reliability, debriefings were performed with participants prior to leaving the school site. The computer software NVivo was utilized to categorize coded field notes from each interview and observation (Benner & Sutphen, 2007; Benner et al., 2009).

The second phase of the study involved a national survey of teachers and students. It was conducted in conjunction with both the National Student Nurses Association

(NSNA) and the National League of Nurses (NLN). According to Benner and Sutphen (2007), the purpose of the surveys was to assist with the collaboration of the results from the Carnegie research team's interviews and observations.

Preliminary results have been cited in an article by Benner and Sutphen (2007), which compares the teaching methods of nursing and the clergy. In December (2009) a book was published that provides detail accounts of Benner and Sutphen's investigation. Within results of their investigation, six characteristics of an excellent nurse educator were identified and explained. They are as follows:

1. Has envisioned a clear picture of the kind of nurse they want to guide into practice.
2. Has placed their student nurses in collaborative roles to gain practice.
3. Uses higher order questioning to stimulate their student nurses' critical-thinking processes.
4. Uses case presentations or situations to guide and evaluate students' responses.
5. Is able to integrate both the art and science of nursing into their pedagogy.
6. Encourages students to dialogue about their thinking process. (Benner et al., 2009; The Carnegie Foundation for the Advancement of Teaching, 2008, Excellent Teaching section, ¶ 4).

One characteristic associated with effective teaching was the encouragement of nursing students to verbalize, or have an awareness of, their thinking processes. The use of higher level questions and case studies that had unfolding presentations was seen as necessary to increase nursing students' higher level thinking capabilities (Benner & Sutphen, 2007; Benner et al., 2009; The Carnegie Foundation for the Advancement of Teaching, n.d.).

Presented within the Carnegie study results was the explicit connection between nurse educators within these "excellent" schools of nursing and the fact that they all implemented pedagogical variations of both case studies and reflective-thinking

exercises. For students to learn at a higher level of cognition, the pedagogies had to be reflective of those that promoted learning at a level of learning that transcended rote memorization (Benner & Sutphen, 2007, p. 103). The pedagogy of concept mapping was not discussed explicitly within the Carnegie study.

National Council Licensure Examination

The licensure examination that all registered nurses must pass after completing nursing school is entitled the National Council Licensure Examination (NCLEX). It is created and administered by the National Council of State Boards of Nursing (NCSBN). The NCSBN has raised the passing standard twice since 1998; the last time the passing standard was raised was the year 2004 (Frith, Swell, & Clark, 2006). The reason for the increase in passing standards is the fact that the professional practice of registered nurses has increased in complexity (NCSBN, 2006).

The type of questions on the examination, along with the format by which the questions are asked, also has been revised. Questions are now often at the level of Bloom's Taxonomy of analysis and synthesis, when they previous were at the knowledge and application level. The format has changed from a simple multiple-choice response approach to a multidimensional case-study presentation type of format. The new format has included test items that require candidates, on some questions, to choose all responses that apply rather than select one correct response. Often it is required that the candidate prioritize a sequence of right answers. Moreover, some questions now require the candidate to manipulate the computer mouse to fill in or place a mark on diagrams within the test question stem, often to identify specific landmarks (Aucoin & Treas, 2005; Block, 2007; Firth et al., 2006).

From 2003 to 2007, the national passing rate on the examinations has dropped from 87% to 83%. The decline is attributed in part to the increased standards set by the NCSBN. A greater contributor, however, is believed to be the added complexity of questions on the versions published since 2003 (Aucoin & Treas, 2005; Block, 2007; Firth et al., 2006). It is stipulated that without adequate preparation of student nurses to think critically or at a higher level of cognition, the national licensure examination's rate of passing will continue to fall in the future (Block, 2007; Firth et al., 2006).

Nurse Educators and Researchers Support

In a study that claims there is a crisis in nursing education, Del Bueno (2005) attempted to demonstrate that new registered nurses are unable to practice at an adequate level upon graduating from nursing school. The study took place in 78 hospitals and one ambulatory outpatient setting. The hospitals represented both rural- and urban-based institutes. Del Bueno evaluated 2,210 new graduates. Each new graduate had been in practice for only one year or less. The evaluation processes consisted of the use of an instrument entitled "Performance Based Development Systems Clinical Competency Evaluation," which was developed by a company that Del Bueno was associated with. The instrument has been used in over 350 health-care facilities during new graduate orientation as a clinical competency evaluation tool. The instrument was created in 1985; however, no reliability or validity measures for this instrument were offered in this article.

The instrument's method of assessment involved the presentation of case studies in a video format. After viewing the video, participants were asked specific questions that were oriented toward identifying nursing interventions that needed to be prioritized and

then performed. Rationales for each of the chosen answers also were required. Responses were given in a variety of methods: multiple choice, fill in, and short answers. The results showed that only 30% of the 2,210 new registered nurse graduates could pass the competency exam. Del Bueno (2005) cited the lack of emphasis being placed on higher level thinking skills in the respective schools of nursing, thus leading to the inability of new nurses to practice competently. She cited the focus on knowledge-level learning as a hindrance to clinical competency and that an emphasis needs to be placed on higher cognitive levels of thinking.

A common concern voiced by nurse educators is that there is too much content to be covered in undergraduate lecture courses. The amount of knowledge needed to practice in the nursing profession, according to Ironside (2004), has increased to an unreasonable amount. The need to add content perpetually becomes problematic for the nurse educator whose only answer to the problem of content saturation is to keep adding more and more content to his or her lecture courses (Giddens & Brady, 2007; Ironside, 2004, 2005; Shell, 2001).

The saturation of content in nursing courses has contributed to the need for education reform. It is believed that educators resort to time-saving lecture sequences that have no higher level learning-stimulation techniques embedded in them, ultimately leading to a gap between academia and practice. This gap is evident in the inability of new nurses either to pass their national examination or be safe within their initial practice settings (Aucoin & Treas, 2005; Del Bueno, 2005; Giddens & Brady, 2007).

A study conducted by Ironside (2004) stipulated that the conventional pedagogies of the past are focused on the instructor teaching instead of the student learning. She cited

the use of pedagogies based on learner-centered methodologies as a necessity. This shift of focus from content-based instruction to the teaching of how to think is one answer to the problem of content saturation. The purpose of Ironside's study was to examine the relationship between content knowledge and thinking. She utilized a data interpretation theory called hermeneutics to explore the relationship between covering content that was perceived as necessary and the utilization of alternative pedagogies. According to Vogt (1999), hermeneutics is a qualitative data interpretation method whose purpose is to gain insight into motives or behavior of participants in a research study.

Ironside's (2004) qualitative study collected data from 36 nurse educators who were teaching in didactic nursing courses. The sample was a convenience one. The research team utilized audio-taped interviews of the educators to collect data. An introductory question regarding the problem of too much content began the semi-structured interview sessions. The participants were then asked to elaborate on the problem of content-saturation. If needed, questions were asked specifically as to what had been attempted or how educators would attempt to modify their teaching to solve the content saturation problem.

If the nurse educators had tried an alternative pedagogy aimed at remedying the problem of content saturation, he or she was asked to think about how trying that new method of teaching came to fruition. Interviews were analyzed by each of the 10 team members and coded for the development of a theme. Discrepancies or ambiguities were clarified by returning to the original transcripts. Once a theme was generated, two outside researchers reviewed the original transcripts and the coding process that substantiated the developing theme.

The central theme that emerged was that nurse educators believed they should be focusing on how their students were learning. It was described that if student nurses could be guided in their thinking process during lecture, they would then be able to apply those same thinking skills to subsequent content that was not presented to them. The participants related that highlighting students' thinking through a reflective learning process was more important than covering additional topics. It was believed that if educators focused on their students' capability to think through a given clinical situation, other situations not covered explicitly during lecture would be handled competently in the future. Thus, a reflective-thinking exercise within the didactic course ultimately was believed to improve higher level cognition.

Examples were provided of how some of the educators presented course material. One participant described a narrative process where the educator and the students think aloud to try and find resolutions to content-laden scenarios. The findings, according to Ironside (2004), were suggestive of the need to deconstruct the additive curriculum phenomena and use teaching pedagogies such as case studies with reflective-thinking components embedded in them to enhance learning.

An oft-cited barrier to the implementation of pedagogies that are associated with improved teaching methods is the lack of nursing research that will assist nurse educators in making the needed changes (Diekelmann, 2001; Ironside, 2004, 2005; Young, 2008). It has been related that there is a need to be diverse in the research approach. Without research that explicitly presents how to alter the traditional lecture format to a more learner-centered approach the enlightenment of nurse educators is incomplete (Ironside, 2001). The question, according to Young (2008), is no longer if a

revision in nursing education is needed; the question is what pedagogies are being implemented effectively.

Critical Thinking and the Connection with Higher Levels of Cognition

It is impossible to educate student nurses about every possible clinical situation. Thus, the need for student nurses to be better equipped to synthesize their care in a comprehensive self-regulatory method of practice is a necessity (Del Bueno, 2005; Ironside, 2004, 2005; Valiga, 2003; Walsh & Seldomridge, 2006).

The concept of enhancing higher level thinking is not a new one to general-education theorists, and, according to Staib (2003), it should not be a new one to nurse educators. Some nurse leaders believe that nursing had identified its own formula for facilitating higher level thinking in the early 1970s. This formula is called “the nursing process.” The nursing process has been deeply imbedded in schools of nursing and hospitals since the 1970s (Tanner, 2000).

The nursing process borrows from the basic scientific method of identifying a problem, collecting data, proposing solutions, testing a hypothesis, and drawing conclusions. The steps aptly have been renamed assessment, nursing diagnosis, planning, implementation, and evaluation. Since the early 1970s, the nursing process has been the accepted means by which student nurses are educated and ultimately serves as the basis of their practice. The problem exists that, due to the complex situations in which nurses now practice, learning needs to go beyond the nursing processes and focus on the enhancement of higher level thinking. This higher level of thinking frequently is termed critical thinking (Del Bueno, 2005; Ironside, 2004; Shell, 2001; Tanner, 2000; Valiga, 2003).

Within the profession of nursing, the term “critical thinking” has been interchanged with several substitutions. Attempts have been made to consolidate the terms utilized, the belief being that once a consensus is reached, research will be more cohesive in how to improve nursing education (Scheffer & Rubenfeld, 2000; Tanner, 2000; Turner, 2005). The term most often substituted with critical thinking is clinical judgment. Regardless of which term one prefers, learning at a higher level of cognition is central to nursing education. It is stipulated that a student who has achieved learning at the level of analysis and synthesis has indeed been able to think critically (Scheffer & Rubenfeld, 2000; Tanner, 2000; Turner, 2005).

Nurse educators are under pressure from national accrediting organizations and the NCSBN to improve nursing students’ critical-thinking ability. The belief is that if critical-thinking capabilities are improved upon while in nursing school then ultimately clinical competency will be enhanced. A belief has emerged that one of the solutions to increasing higher level thinking skills is the implementation of teaching strategies that are learner-centered (Del Bueno, 2005; Ironside, 2000, 2005; Staib, 2003; Valiga, 2003; Walsh & Seldomridge, 2006).

The consensus statement, developed by Scheffer and Rubenfeld (2000), has led to an accepted understanding of the desired attributes of what a critical-thinking nurse should emanate. An inherent perception, embedded within the identified attributes of a critical-thinking nurse is that to achieve maximum-level learning, nursing students need to be active in the learning process. To achieve active involvement in the learning process, students must be the center of that learning progression. Pedagogies that are related to learner centered are concept mapping, case studies, and reflective-thinking

exercises (August-Brady, 2005; Daley et al., 1999; Kern, Bush, & McCleish, 2006; Scheffer & Rubenfeld, 2000; Staib, 2003; Turner, 2005).

Learner-Centered Teaching Methodologies

Specific strategies that are associated with increased learning at a higher cognitive level are associated with the theoretical framework of my study. The Information Processing Theory guides educators to achieve a classroom environment that focuses on the students' learning and not on the teachers' teaching (Ormrod, 2003). It has been stated that the pedagogy, not the teacher, is the actual key to successful learning for nursing students. An insightful and knowledgeable nurse educator provides an environment conducive to learning by strategizing creatively the didactic educational interactions between students and educator (Bastable, 2008; Diekelmann, 2001; Ironside, 2001; Lowenstein & Bradshaw, 2004).

According to Lowenstein and Bradshaw (2004), nurse educators need to provide a variety of teaching strategies. They stipulated that for learning to occur at the level needed for nurses to practice successfully, nurse educators need to reflect on their teaching practices. It was once believed that nurse educators could rely solely on the idea that imparting knowledge in a telling fashion is all that is needed to educate students in a didactic setting. The traditional lecture format of the instructor being the center of attention and thus the primary focus during a didactic course, however, is no longer appropriate. The needed revision, according to Bastable (2008), should come from nurse educators themselves and must focus on their pedagogical practices. The concept, of students being able to increase their learning, if they are active in their learning process is a distinguishing concept within nursing journals. The specific methods of implementation

of these teaching strategies associated with learner-centered classrooms, however, are not disseminated widely within nursing literature and little empirical investigations have been initiated (Lowenstein & Bradshaw, 2004; Jeffries, Rew, & Cramer, 2002).

Pedagogies Associated with Higher Cognition

Within this section of the literature review, I present three teaching methodologies. The three methodologies are concept mapping, case studies, and reflective-thinking exercises. These three methodologies are representative of commonly identified pedagogies utilized by nurse educators to enhance higher level thinking skills in nursing students within a didactic setting. They represent the three most commonly cited pedagogies identified during my literature review that are believed to be learner centered.

In one study, Staib (2003) attempted to investigate which pedagogies are being used to enhance student nurses' critical-thinking abilities. She stated via a literature review that she was able to compile the most common pedagogies to teach higher level thinking skills. The search was performed on literature from 1996 to 2002 using the Cumulative Index to Nursing and Allied Health Literature (CINAHL) database. A total of 17 articles ultimately were reviewed. The articles reviewed represented the most commonly occurring teaching strategies employed to enhance thinking in student nurses (Staib, 2003).

Staib (2003) initially discussed each of the articles reviewed and then established a relationship with the definition of critical thinking offered by Scheffer and Rubenfeld (2000). The pedagogies most cited as being used could be categorized into the following three methods: concept mapping, case studies, and reflective-thinking exercises.

Identifying pedagogies that focused on student nurses thinking about the way they were thinking during specific nursing situations was the ultimate goal for each of the methods. The methodology of concept mapping was set apart from the other two because of its visual component but was believed to be equally as contributory to enhancing critical thinking (Staib, 2003).

The method of offering different perspectives to students via a visual representation (concept mapping) is said to be a visual conceptualization. So in essence, instead of a written account of a complex nursing practice issue, a visual conceptualization is alternatively provided. A visual account, such as concept mapping, is a tangible means by which to view nursing care (Staib, 2003).

Concept Mapping

Pedagogies utilized in the education of student nurses' need to have a dynamic format. They must allow for active learning to take place (Daley, 1999; Kern, Bush, & McCleish, 2006; Staib, 2003). To this extent, the use of concept mapping as a critical-thinking education tool has received consistent support. Concept maps are often called visual diagrams or mind mapping (Kern et al., 2006; Staib, 2003).

One can think of concept maps as boxes with lines and arrows that are appropriately attached. They are drawn to create the interrelationship of a specific topic, skill, or component of nursing practice. Concept maps possess dual purposes. They can be utilized to present course content, and they are appropriate for the assessment of higher level thinking in student nurses (Daley et al., 1999; Kern et al., 2006; Staib, 2003). Educators who enlist mapping to present lecture content in an organized fashion demonstrate the dynamic relationships between nursing concepts; those who choose to

utilize them for evaluation purposes are assessing the active thought processes of nursing students (Kern et al., 2006; Staib, 2003).

The goal of any critical-thinking learning process is to allow students the opportunity to conceptualize content for themselves. Concept mapping is an example of just such a metacognitive tool. Concept mapping allows individualization of the learning process (Daley et al., 1999; Kern et al., 2006; Staib, 2003).

An example of how concept mapping could be employed during a traditional lecture presentation is presented by Daley (1999). A nursing situation could be pain management. Using concept maps to teach pain management would mean forgoing the typical text-based approach of explaining pain management; instead, the instructor would use mapping to provide a three-dimensional view of the caring process. By demonstrating the connections graphically, she or he can stress the interactive nature of managing a client's pain (Daley et al., 1999; Kern et al., 2006).

Daley (1999) conducted an investigation that evaluated the use of concept maps as a teaching and evaluation tool. Included in the study was a convenience sample of 18 senior students at a Midwestern baccalaureate school of nursing. The students were instructed on how to develop a concept map and were given grading criteria for each map. The criteria specifically stated that the connections between key components of the patient-care situation had to be addressed and in the proper priority. A total of three maps were due over the course of the semester. The maps were graded by two independent scorers, who were also educators within the school of nursing, and by the teacher of the students involved in the investigation. An educator-created written rubric for the maps was utilized for grading. Correlation between the independent scores for each of the three

maps ranged from .82 to .84. This level of internal consistency is appropriate for the purpose of the evaluation tool.

Mean changes from the first sample map to the third were from 40.39 to 135.56, for a difference of 98.16 points. The dependent-samples *t* test comparing the score on the first concept map with that of the final was 5.69, which is statistically significant (Daley, 1999). The measure of explained variance, which was not reported within the investigation, is very large at .66. The interpretation was that, the *t*-test differences were indicative of an increase in cognitive learning or, as termed, critical thinking (Daley et al., 1999). In their summary, Daley et al. stated that concept maps are metacognitive tools that help learners assess self-appraisal of their own thinking process. Daley et al., Kern et al. (2006), and Staib (2003) proposed that the use of concept maps promoted a shift away from behavioral learning strategies (memorization) to higher cognitive levels of learning.

In a qualitative study by Kern et al. (2006), a slightly different approach to concept mapping was employed, the term “mind mapping” was utilized. The same underlying principals as concept mapping, however, were initiated. The study attempted to alter the hallmark nursing educational tool of care planning into an alternative “care map.” Instead of requiring the nursing students to create a care plan that was linear in design, with just words representing the type of care required for one of their patients, the study called for the students to create a “care map” (Kern et al., 2006, p. 114). The “care map” was in actuality the nursing process or care plan represented in visual presentation via a concept map, the map represented the essential plan of care for that student’s patient.

The beginning of the study incorporated teaching sessions for the nursing students in how to construct a concept map. Following the mandatory sessions on how concept maps were created for a care plan, all care plans turned into the faculty for the rest of the semester and the following semester were to be in the care-map format. The faculty (n=29) were then surveyed on their opinions of the effectiveness of care mapping in helping students identify and understand the important aspects of care for their students patients as compared with traditional written care plans.

The results of an open-ended survey identify that 97% of the faculty believed students were viewing their patients more holistically and 94% indicated that they individualized the plan of care more specifically for the patients they took care of. Of the 29 faculty members, 91% indicated the care mapping enhanced critical thinking within their students. The same open-ended survey was administered to the participating students (n=168).

One resulting theme, of the student survey, demonstrated the idea that the care maps helped students (60%) correlate nursing assessments, diagnoses, and expected outcomes more effectively. Of the 168 students who responded, 56% identified the idea that the maps helped them visualize the patient holistically. The fact that the care maps were time consuming was voiced by 40% of the students. One of the underlying reasons for implementing this type of care planning is that it makes the students less reliant on predesigned plans of care that are available in nursing textbooks; however they have the potential to be more time consuming and more labor intensive to create (Kern et al., 2006).

The idea that creating a concept map or care map enhances a student nurses' higher level of thinking or critical thinking skills as compared with the standard written word, stems from the premise that student nurses are active in the learning process. They are creating the links that are visually represented on the map, however, the processes is learner centered (Daley et al., 1999; Kern et al., 2006; Staib, 2003; Tanner, 2000).

Another method of presenting complex patient care issues to nursing students is to facilitate their thinking through a predesigned case study or scenario. The use of case studies by faculty who teach in the medical and law professions, for this very reason, has been well established (Kim et al., 2006).

Case Studies

According to Kim et al. (2006), the use of case-based teaching is considered to be a superior lecture methodology. Within their 2006 study, they sought to perform a literature review that would identify how different disciplines design and implement case studies in the didactic academic environment. The purpose was to examine the key components of an effective case-study lesson plan so that a universally accepted evaluation process for their use could be initiated.

One hundred original studies published by multiple disciplines were obtained randomly and reviewed. Close to half of the obtained studies were found from the discipline of medicine (40 studies). The technique of case-base education has been used widely in both medicine and the law. There were five studies that represented reviews from the profession of nursing. After reviewing all 100 research articles, five key conceptual frameworks were stated to be crucial to comprehensive successful case study pedagogy.

The five key mechanisms were relevancy, realistic nature, engaging, challenging, and instructional. Kim et al. (2006) stipulated that with a universal method of evaluating case-study implementation an organized framework for valid comparisons of effectiveness could begin. They concluded that within the findings that one of the main benefit for using a case-study approach, in a didactic setting, was to enhance the synthesis of a broad range of concepts within the given profession.

The attainment of higher levels of cognition (synthesis level) is a stated outcome to which all baccalaureate schools of nursing must subscribe. The guidelines of both accrediting organizations require this outcome. Allen, Rubenfeld, and Scheffer (2004) developed a case-study approach to teaching and assessing higher levels of thinking. In an attempt to investigate their approach, two separate schools of nursing in the state of Michigan took part in a study. The sample was a convenience sample that represented senior students from the two universities. A stated goal was to develop a method to both teach and evaluate nursing students' critical-thinking capabilities.

University A had a sample size of 24 and university B a sample size of 14. The participants at university A were enrolled in a leadership course, and those at university B were students enrolled in an advanced medical-surgical course. Two data-gathering methods were used at each university. The first method involved the use of instructor-created case studies that were presented to each of the participants. The participants had first to identify which dimension of critical thinking was being demonstrated within the case. They then had to describe how the nurse in the case study was employing that dimension of critical thinking. In addition, the student participants had to relate how they

came to recognize the dimension. In other words, student participants had to describe the thinking that led them to their conclusion.

The other method utilized was that each student had to identify and then describe a recent clinical experience that for them identified their use of critical thinking. The researchers' contentions were that the use of their case-study approach offered an active-learning environment for students: one that was learner centered. At the same time, it allowed educators the ability to assess the level and appropriateness of each student's understanding of the dimensions of critical thinking that are specific to nursing.

The responses were short (less than one typed page). The researchers created a scoring rubric. The team of researchers, along with the two instructors for the courses, graded the responses. Scoring was broken down to three components: identification of the dimension, justification of the actions related to the dimension, and quality of the student's response. Cronbach's coefficient alpha levels for internal consistency were stated to be .71, .80, and .79 at institution A; for institution B, they were reported as .75, .74, and .72. Within educational research institutions, these values are believed to be statistically acceptable; their level of consistency demonstrates reliability of the scoring rubric. At the conclusion of the study, Allen et al. (2004) reflected on the consistency with which they were able to assess the students' understanding of the dimensions of critical thinking. Because the activity was learner centered and an active process, it was believed to be an example of one potential solution to enhancing nursing education.

In a position paper, Van Eerden (2002) altered the name of the teaching methodology from "case studies" to "vignettes." The vignettes were defined as educator-created scenarios that were scripted and designed specifically to enhance student nurses'

thinking processes regarding complicated patient-care issues. They were presented to the students initially in a didactic section of an intermediate level medical-surgical course. The stated purpose of Van Eerden's article was to offer an explanation of how to use unfolding vignettes to increase critical-thinking skills in student nurses. Unfortunately, no investigation was offered within this paper; however, the inclusion of Van Eerden's ideology in this review of literature has merit.

According to Van Eerden (2002), a skeleton vignette was provided to the students prior to the class meeting on their assigned lecture day. The students were instructed to be familiar with the underlying disease processes presented in the vignette. On the day of lecture, the specific components of the vignette were discussed in a large group forum. The underlying educational components embedded in each vignette that were necessary for the students to address were select psychomotor skills, therapeutic communication, client teaching, analysis of environmental cues, physical findings, ancillary findings, affective clues, and collaboration needs. During class time, instructor-guided analysis and evaluation of multiple potential scenarios that could unfold from the baseline vignette were discussed. Van Eerden stated that during class time, specific emphasis was placed on the process by which the students concluded what (if any) nursing interventions were needed. In other words, she used metacognitive practices to provide an example of thinking through a clinical situation. In addition, emphasis was placed on looking at the presented case from multiple viewpoints. It was important to be open to other possible alternative nursing interventions than initially had been decided upon.

Comprehension of embedded components within the scenarios was evaluated using role-playing. The role-playing evaluation exercise was achieved by employing

standardized patients. Other nursing students from a different course were used as the standardized patients. Their responses had been scripted.

The environment in which the evaluations took place was set up to give clues to needed nursing interventions. The instructor and graduate assistants were used as evaluators. No letter grades were given to the nursing students. After the initial trial of performing care on the standardized patient, a formative evaluation was shared with the student, after which the student repeated the performance (Van Eerden, 2002).

A comment by one student in Van Eerden's class related the following regarding the use of the vignettes: "The vignettes provided an opportunity for me to prepare for not only the technical skills needed to perform my nursing care but to practice pulling everything together in a realistic setting" (Van Eerden, 2002, p. 234).

It is related within the conclusion of this article that until nurse educators consolidate both the didactic and the clinical aspects of nursing education a disconnect will continue to be present and student nurses will struggle with the synthesis of complicated nursing care. The use of case studies allows a multiperspective view of nursing practice that attempts to bridge the disconnect (Van Eerden, 2002).

In an investigation by a group of professors, within the medical field, the difference between two learning assessment methodologies were studied. The purpose of the study by Schuwirth, Verheggen, van der Vleuten, Boshuizen, and Dinant (2001) was to demonstrate that the utilization of case studies to evaluate complex medical concepts was more conducive to higher level learning than factual knowledge questions. They utilized four short cases that were developed incorporating predetermined key concepts. The case studies were reviewed carefully for relevance and were based on real patient

scenarios. The counterpart factual-based questions were based on straight forward questions similar to the case-study questions but were not introduced with the supporting case study.

One group of medical students took an examination that was base on a case study; the other group of medical students had only the questions without the case study. The questions were developed carefully so that content was of equal difficulty level. The factual knowledge questions consisted of both open-ended and multiple-choice type question format; however, no scenario was provided before the questions were asked. There were 20 medical students involved in the study who were assigned randomly to a group, either knowledge based (n=10) or case based questions (n=10). Participation was voluntary (Schuwirth et al., 2001).

The cases along with the predetermined questions and the knowledge questions based on facts were presented to the appropriate groups. Candidates were tested individually and were provided cases and questions in written form. Participates' were asked to think aloud while answering both the knowledge questions and case-based questions. The responses were audio taped. No encouragement or advice was given by the researchers. Following audio taping, the transcribed data were analyzed independently by each of the five researchers and then combined for final coding by the lead investigator.

The analysis phase of this qualitative investigation was competed by non-parametric tests of statistical significance. Initially to evaluate the responses by the medical students to both types of assessments, a word count of correct responses or responses that were leading to a correct response were counted. All words were included

except those filler words such as “eh” and “ah”; results were expressed as number of words. Mann-Whitney U tests were used for word count. In the case-based question, the mean word count used by the students was 135.29. In the factual knowledge-based questions, the mean count was 38.68. This difference was statistically significant $U=41300$.

The results of the word counting, according to Schuwirth et al. (2006), was indicative that the processes of thinking through a case presented situation gave the students a higher level of thinking processes to scribe to. They enlisted a reasoning process that was based on meaningful clinical expertise rather than short nondescript facts only answers. Schuwirth et al. reported that placing the question in a realistic context has a desired effect of students synthesizing cognitive problem-solving operations correctly as compared with rote memorization responses to factual questions. They stated that the evidence of brief true-false considerations that factual based questions elicited were *less* likely to assist the students in real patient situations because they did not initiate critical- thinking processes (Schuwirth et al.).

A limitation to the study is the inability to generalize the findings to other populations due to the small sample and the subjectivity of the qualitative interpretation of responses. The population of course was a convenience sample, increasing the inability to generalize. Schuwirth et al. (2006) offered detailed steps for development of the questions and cases. They also offered documentation of how the audio tapes were analyzed; however, no statistical consistency was provided.

The last pedagogy to be presented in this review of literature is that of reflective-thinking exercises. The use of reflective-thinking exercises is stipulated to be a viable

component of both concept mapping and case studies. According to some nurse researchers, reflective thought exercises are embedded in both concept mapping and case studies. The process of reflective thought exercises represent a common connection between the other two pedagogies that assists them in the facilitation of learning (Bell et al., 2002; Schell, 2006; Staib, 2003).

Reflective-Thinking Exercises

The purpose of reflective-thinking exercises, according to Staib (2003), is to assist students in identifying their own thinking processes. If designed correctly, the exercise process will allow students to be able to examine their own cognitive learning processes. Thus developing metacognitive skills that will help them with lifelong learning at a higher level of cognition. The teaching technique of having students verbalize their thought processes in an organized manner is believed to be equally effective as having them write them down in a journal. According to research, the thought processes is what is key not the fact that the thoughts were written or not (Bell et al., 2002; Diekelmann, 2001; Ironside, 2003; Van Eerden, 2003).

In a study by Bell et al. (2002), a six-step thinking exercise was enlisted to explore its effectiveness in learning with first-year nursing students. The six-step thinking exercise is based on Thornhill and Wafer's (1997) process-focused learning strategy. The description of the six-step thinking exercise initially calls for student nurses to recall a specific incident from their clinical experience. The incident should have caused them to engage in critical thinking. In the second step of the exercise, students were asked to answer the following four questions:

1. What triggered their critical thinking?
2. What resources were helpful?

3. What were the high and low points?
4. What happened as a result of their critical thinking?

In the third step of the exercise, assumptions that were both explicit and implicit in the incident being described were identified. With in the fourth step, students were asked to identify the contextual variables and how different individuals' perspectives might have affected their thought processes. The fifth step calls for the student to speculate about alternative ways that the incident might have played out. In the final step, the student nurse identifies the clinical practice issues inherent in the incident (Bell et al., 2002).

There were 41 participants in this study, all third-year nursing students in a baccalaureate nursing program. The investigation of this study began with a one-hour conference held with the students. During this conference, an explanation of the thinking exercise was presented. Forms were provided that had a space for a synopsis of the incident to be discussed and an area for the student to respond to the four questions and steps 3 to 6 of the thinking exercise.

Participation was voluntary, and incidents were turned in anonymously. Faculty selected one incident to present during class. All students were given copies of the incident and a guide that advised them to focus their discussion on steps 2 through 6 of the exercise. During the discussion, faculty recorded the students' responses. Three sets of data were collected during this investigation.

They were the submitted critical incidents, the corresponding written responses, and classroom recordings of selected critical-incident discussions. All three data sets were analyzed by two independent faculty members. The data were first grouped together by type of data. Descriptions of each data set were then written, and categories were

developed from the descriptors. Themes that appeared relevant were identified from the categories. All categories were agreed upon by the two independent analyzers. The themes that developed most often from the submitted incidents were reported as follows:

1. The triggers of critical incidents were stated as having to do with communication, multiple causation, and patient welfare at stake.
2. The resources most commonly cited as helpful were receptionist, patient, and data tools, such as the patient's chart.
3. The low points related to the incident tended to be responses that reflected the lack of action by the health care team.
4. The highest points related to the incident were stated to be students initiated problem-solving efforts.
5. Identified practice issues inherent in the incidents were professional accountability, patient advocacy, and communication. (Bell et al., 2002, p. 176)

The six-step thinking exercise was viewed as a tool that allowed students to focus on and then clarify critical incidents that take place in their practice setting. It requires them to look at multiple viewpoints on the same incident. According to Bell et al. (2002), this self-directed learning tool demonstrated the value of identifying how student nurses develop and begin to think critically within clinical situations.

Professional nursing characteristics that were deemed important were identified and elaborated on by students, thus taking the attention away from the teacher. According to Bell et al., the use of this teaching methodology provided the following positive effects:

1. Provided a model that was easy and simple to use.
2. Promoted the reflection of different perceptions and assumptions about the same incident.
3. Assisted role development.
4. Confirmed conflicts associated with the role of nurse. (p. 176)

Emphasis on memorization of content only, during a lecture course, does not support a student nurses' clinical practice. Pedagogies used by effective nurse educators are those teaching techniques that place an emphasis on thinking through a learning

experience, rather than placing the focus on basic knowledge facts that may seem disjointed to the student and could possibly be difficult to later synthesis into their nursing practice. Having students verbalize or document via journaling their thinking process is a means to enhance their cognitive skills (Van Eerden, 2002).

Another form of reflection, discussed by Mottola and Murphy (2001), implements an antidote dilemma scenario. The scenario has multiple nursing dilemmas that involve a high-risk patient. The dilemmas noted in the sample scenario included visitor safety, pharmacotherapy, medication administration, and current unit polices. The researchers designed the scenario so that there were no right or wrong answers. After reading the scenario, the students initially were asked to answer independently the first question. This first question has the students reflect on the clinical decision dilemmas and how they would respond. Answers were brief, the students are given 10 minutes to complete their responses.

On the next page of the activity sheet, students were to write down *how* they came to the response to the first question. In other words, they were encouraged to think through their thought processes of how to solve this nursing dilemma. Following the second response, students put there activity sheets on the sides of the classroom.

Responses were posted on big poster-size paper.

All students were able to view the responses of their classmates. After the participants had reviewed their peers' responses, a discussion ensued. According to Mottola and Murphy (2001), the implementation of this reflective- thinking exercise students have demonstrated both increases in satisfaction levels of the learning experience and increase critical-thinking skills as demonstrated by practice in the clinical

setting. An important limitation to this informational article was the lack of implementation of a pre- and postmeasures of outcomes, which according to Mottola and Murphy (2001) was their next plan of action. A search for further studies by the two researchers did not produce follow-up research.

In a 12-year study by Diekelmann (2001), a process that he called narrative pedagogy was implemented as a reflective-thinking process that incorporates the lived experiences of students, instructors and clinicians. The conceptual framework for the implementation of narrative pedagogy, according to Diekelmann, is feminist and postmodern theory.

The participants for this study were recruited from listservs, professional meetings, and conferences. The ultimate participant sample was over 200 combined students, educators, and clinicians. The purpose of the study was to document an innovative approach to education reform within schools of nursing. The design was qualitative. Data gathering took place by Diekelmann (2001) performing over 200 interviews. Each nonstructured interview was audio taped, the participant was to respond to the leading question “Tell a story about a time that reminds you of what it means to be a student, teacher, clinician in nursing education” (p. 55).

All interviews were transcribed, and an approach called hermeneutical was utilized to analyze the interview texts. Hermeneutical qualitative data interpretation calls for a coding process that implements exemplars from the interviews to allow understanding of the participants’ meaning and shared experiences. For 12 years, Diekelmann analyzed the stories hermeneutically for common themes or revelations. Ultimately her common theme was that of narrative pedagogy.

Simply stated, by sharing personal experiences with their students, educators are offering a reflective-thinking exercise to the students. In turn, allowing the students to share personal experiences within class also transfers real-life nursing situations to the class as a whole to reflect upon. According to Diekelmann (2001), this shared experiences are an innovated means to enhance the traditionally based Power Point® lecture format.

According to Davidhizar and Lonser (2003), the use of narrative pedagogy is storytelling within the classroom. They cited the use of personal stories by educators as essential for students to learn important clinical applications. According to Davidhizar and Lonser, the stories are remembered by the students' years after they have left the classroom (Davidhizar & Lonser, 2003; Ironside, 2003).

Ironside (2003) used Heideggerian hermeneutics to analyze how using narrative pedagogy influences students' thinking. She interviewed 18 students and 15 instructors. Her central question was "describe an experience that stands out in your mind as when you used narrative pedagogy or were a student and an instructor utilized it." Data analysis included six separate readers who coded the audio-taped responses into two themes.

The first theme was "Thinking as Questioning: preserves perceptual openness." The second theme was "Practicing Thinking: preserving fallibility and uncertainty" (Ironside, 2003, p. 515). According to Ironside, these themes demonstrate how teachers and student experience thinking. She stipulated that during the use of narrative pedagogy or storytelling the outcome is influence by each individual thinker; therefore, initiation of the practice of thinking during a didactic setting is achieved.

Summary

Nurses practice in an environment that is in a constant state of motion. Therefore, nursing education also needs to be continuum based (Del Bueno, 2005). Pedagogies of nurse educators are in need of revision and modification. Teaching techniques that are focused on the learner instead of the teacher are crucial to the revision process; thus, the pedagogies being utilized by nurse educators who teach didactic courses in California baccalaureate nursing programs are an appropriate investigative source. The instructors who were studied are believed to be educators who are implementing teaching strategies that are associated with meaningful learning at a higher level of cognition. This level of learning prepares students to be critical thinkers and allows for successful practice in the 21st- century health-care environment (Del Bueno, 2005; Ironside, 2004; Walsh & Seldomridge, 2006). According to the conceptual rationale outlined in the previous chapter (Information Processing Theory), this level of learning is reached when educators implement teaching strategies that are learner centered (Ormrod, 2003).

Initially presented in this chapter was research that supports the need for a revision of nursing education. The national governing organizations of nursing education have addressed the issue, along with prominent nursing leaders. Within both groups, position statements call for an attempt to increase student nurses' critical-thinking processes (AACN, 1998, 2009; Keating, 2006; Oermann & Gaberson, 2006).

A subsection of this first main area focused on the connection between teaching nursing students how to think at a higher level of cognition and that of critical-thinking ability. Stated was the belief that a modification in the pedagogies utilized by educators

of didactic courses should focus on the learner instead of the instructor, the pedagogies needed to be learner centered (AACN, 2009; Del Bueno, 2005).

Examples of pedagogies that enhance higher level of cognition were identified as concept mapping, case studies, and reflective-thinking exercises (August-Brady, 2005; Daley et al., 1999; Staib, 2003). The final section of this chapter offered a literature review of some of the pedagogical uses of the three identified pedagogies that have been linked to learning at a meaningful level (Ironside, 2004; Staib, 2003; Van Eerden 2002).

To a certain extent, however, there still appears to be a lack of nursing literature that explicitly explains the implementation strategies adhered to while utilizing the three pedagogies. The specific methods employed by nurse educators when implementing the pedagogies that are learner-centered are still in need of being investigated. Therefore, the investigation into how my participants are implementing the pedagogies of concept mapping, case studies, and reflective-thinking exercises was a worthy journey to pursue. The knowledge gained from observing my participants' while they were utilizing the pedagogies was needed to help explain specifically how they were being implemented. The following chapter contains details regarding the methodology performed for my investigation.

CHAPTER III

METHODOLOGY

The purpose of this study was to examine the pedagogies of effective nurse educators. The identified nurse educators currently are implementing teaching methodologies that enhance meaningful learning at a higher cognitive level. The three specific pedagogies that were examined were concept mapping, case studies, and reflective-thinking exercises. There were two guiding frameworks that conceptualize this study: the Information Processing Theory (Ormrod, 2003) and the Dimensions of Thinking Framework (Marzano et al., 1988). In this chapter, the research design, sample selection, data collection, and analysis techniques performed are provided.

Research Design

The blueprint for my research was a qualitative multisite case-study design. Bogdan and Biklen (2007) compared a case-study design with that of a funnel. At the top of the funnel, at its broadest point, case-study research maintains a holistic view. Data are collected by observing, interviewing, and reviewing pertinent documents obtained from each case. As the funnel begins to narrow in width, so does the next step in a case-study design; thus the tapering of collected data is initiated. This narrowing of the data is accomplished via coding.

Coding is a process by which categories or themes emerge from raw data. Coding is achieved by constant and repetitive review of raw data, which consisted of transcribed interviews, observations, field notes, and documents obtained from each participant (Bogdan & Biklen, 2007; Creswell, 2007; Merriam, 1998). In the purest form, case-study research design that bases its analysis on inductive and constant comparison procedures seeks to discover categories or patterns that develop without any preconceived assumptions (Patton, 2002; Strauss & Corbin, 1990). The use of the Information Processing Theory as a conceptualizations offered

my study a focus for gathering data. The use of this theory was not to establish preconceived patterns or themes. The ideology was utilized as a supportive framework for data collection rather than a tool for compartmentalization of data. According to Strauss and Corbin (1990), the use of a conceptual framework as a guide for identifying patterns is appropriate, provided that the framework does not act to suppress naturally occurring themes.

Analysis of collected data, according to Strauss and Corbin (1990), can be based on a theoretical framework if theoretical sensitivity is maintained. Theoretical sensitivity is the ability of the researcher to identify connections between collected data. It is the ability of the researcher to offer insight, apply meaning, and separate the relevant from that which is not (Strauss & Corbin, 1990). The ability to maintain theoretical sensitivity has several support systems, all of which were employed within my investigation. According to Strauss and Corbin (1990), one support is the review of literature applicable to the purposed research. The second and third sources cited are the professional and personal experiences of the researcher. A discussion regarding my experience is provided within the “Researcher’s Role” section of this chapter.

Case-study qualitative research is based on the ideology of a postpositivism viewpoint. The postpositivism view acknowledges that knowledge is relative; its counterpart, the positivism viewpoint, maintains that knowledge is absolute (Patton, 2002). Within this type of research design, a specific group of participants are observed in their natural environment (Bogdan & Biklen, 2007; Creswell, 2007; Merriam, 1998). This study observed in an unobtrusive manner the naturally occurring events that took place in California baccalaureate schools of nursing while effective nurse educators taught their didactic nursing courses. The research design, therefore, was fundamentally a nonexperimental one.

The predominant data-collection technique was associated with qualitative case-study research design methodology; however, a descriptive component is included in the study. An observational multisite case-study approach was utilized to gather data. The unit of analysis was the case studies of nurse educators who have had been identified as utilizing the pedagogies of concept mapping, case studies, and reflective-thinking exercises.

Similarities and differences, observed within and between each of the cases, were reviewed. Ultimately, the acquired results are reported systematically in the following chapter. Computer software often is utilized to assist in this process and was used within my study (Creswell, 2007). The computer software utilized was NVivo8 and is described within the data analysis section of this chapter.

Instruments included demographics, questionnaires, one interview with each participant, three observations with debriefings, and course documents. Course documents included each participant's syllabus and other course-related documents such as assignments, readings, evaluation tools, and study guides. The methodological underpinnings of this study are based on reality-focused research principles (Creswell, 2007). Each site or participant represents a unique case; however, each case also shares common characteristics. My rationale for utilizing a multisite case-study research design stems from the need to document the pedagogical interactions of effective nurse educators from a holistic vantage point, a view that eventually allowed a detailed description to be presented.

Sample

Participant selection was achieved via purposeful sampling. Utilizing this type of sampling method allowed for the selection of individuals who assisted with the understanding of the research problem (Creswell, 2007). Their selection included two subtypologies of purposeful

sampling. The first subtype of purposeful sampling was represented by extreme sampling. Participants studied represented nurse educators who are progressive in their pursuit of enhancing higher level thinking skills in student nurses. Their implementation of the pedagogies of concept mapping, case studies, and reflective thinking exercises demonstrate this.

The second subtypology, represented by my research design, is that of criterion sampling (Creswell, 2007). The specific inclusion criteria of scoring a greater percent value on the subscale *Learning Facilitation* on the Orientations to Teaching Questionnaire assisted in assuring that my participants were committed to providing a learner-centered classroom environment.

At the time of this study there were 29 accredited baccalaureate schools of nursing in the state of California. Potential participant names were obtained from referrals made by nurse leaders who currently are occupying leadership roles within those schools. Another sampling method that evolved was that of snowball sampling, which often occurs when purposeful sampling methodology is employed (Creswell, 1998, 2007). Essentially, snowball sampling took place, as one referral was made by a participant herself.

As stated, an inclusion criterion was that the nurse educators currently were teaching a didactic portion of an undergraduate nursing course at a baccalaureate school of nursing in the State of California. No exclusion was made for age, gender, or educational level of the participant. A second inclusion criterion was that each participant was implementing concept mapping, case studies, and reflective-thinking pedagogies. A final inclusion criterion was that all participants scored a greater percentage on the Orientations to Teaching Questionnaire as having an orientation or approach to teaching that is *Learning Facilitation* rather than a *Knowledge Transmission* orientation to teaching; thus demonstrating that her approach toward teaching was

primarily learner centered. A detailed description of this questionnaire is offered in the instrumentation section of this chapter.

A small token of appreciation in the form of a \$150 gift certificate was presented to each participant during the data-collection phase of my study. The choice of each participant was based on the assumption that she represented an extreme rather than the typical representation of a nurse educator. Therefore, the selection of participants included those individuals who could be considered outliers (Creswell, 2007; Patton, 2002).

Exploring these notable case studies offered the required insight to answer the stated research questions. Merriam (1998) described cases as portraits and went on to relate that the inclusion of at least 3 cases or portraits that are in-depth allows for increased validity of generalizations. Also according to Merriam (1998), if cases are located in multiple sites, a more compelling interpretation of findings is achieved. A sample size of 4 participants ultimately was achieved (Table 1). All 4 participants ages ranged from 45 to 55 years of age, and all are female.

Table 1
Demographics and Pseudonyms Assigned

Pseudonym	University	Location of University	Years as Nurse	Highest level of Education	Years Teaching	Type of Course Teaching	Semesters Teaching Course
Amy	B/Public	Central	20-25	PhD	5-10	Maternity Research	4 2
Avery	C/Private	Southern	5-10	EdD(c)	< 5	Medical/Surgical Pharmacology	> 4 > 4
Ivy	A/Private	Northern	> 26	Post MSN	5-10	Pathophysiology Medical/Surgical	> 4 > 4
Yolonda	D/Public	Northern	> 26	Post MSN	> 26	Physical/Assessment Pathophysiology	> 4 > 4

Note: EdD (c) = Doctorate in Education advanced to candidacy

Recruitment

The participant recruitment method began with the contact of all 29 nursing department directors or their equivalent. A recruitment letter (see Appendix A) was the method of contacting each department leader. The purpose of this initial contact was not only to obtain referrals of potential participants but also to gain their administrative support. Another resource for referrals to my study was to contact the esteemed author and researcher Dr. Patricia Benner. I received a response from Dr. Benner that she would be unable to supply names of any potential participants for my study. She cited confidentiality as a reason.

The initial contact of the nurse leaders took place during the early Spring semester of the 2008-2009 academic school year. Contact took place via electronic mail (email; Appendix A). A one-time follow-up to this initial contact with nursing leaders was initiated. After acquiring names of 7 potential participants, contact letters were sent to each of the 7 individuals by email (see Appendix B). Two follow-up emails were employed if no response was received initially. Four confirmatory responses were obtained. Telephone numbers were acquired through email correspondents and contact was made by phone to further explain the study, including the required time commitment each participant should expect. During that initial telephone contact, each potential participant was asked to submit a demographic information survey (Appendix C) and a questionnaire entitled Orientations to Teaching Questionnaire (Kember & Gow, 1994). Permission to use questionnaire see Appendix G.

The purpose of the Orientations to Teaching questionnaire, within my study, was a participation criterion. It was used to assist in the determination that my participants have associated their views of teaching to a greater percentage with that of learner-centered pedagogies. The questionnaire was administered electronically. After a pre-agreed upon time

frame that allowed the four participants to consider committing to my study, I recontacted the participants. During that same time frame, I reviewed the electronically submitted demographic survey and analyzed the Orientations to Teaching Questionnaire. Commitments ultimately were expressed by the potential participants, and because the review of both the demographic survey and the analysis of the Orientations to Teaching Questionnaire demonstrated that the candidates were appropriate, informed consent was obtained (see Appendix D). Initial site visit dates and times were scheduled. During each initial site visit, the second and third site visits were scheduled. Site visits began in March of 2009 and concluded in May 2009. Each of the four participants were visited three times each.

Protection of Human Subjects

In accordance with the Institutional Review Board at the University of San Francisco and the American Psychological Association's ethical principles (2002), participants were informed in written form and provided with verbal clarification, as needed, of the study's details. Written consent was obtained from each of the participants (Appendix D). Participation was assured to be on a volunteer basis, and each participant was advised that she could have resigned from the study at any time during the process.

To ensure confidentiality, the participants are identified with both pseudonym names for themselves and for the school of nursing they are associated with. Identities of the participants are only known to this researcher. All identifying characteristics have been eliminated from the presentation of results. Data gathering was initiated at the convenience of the participants. With written consent, each interview and observation was audio taped. Observations of the participant interacting with students during a lecture occasionally were video recorded for clarification of interactions observed. Once the brief video clips had been used for clarification during a

debriefing session I destroyed them. No student appeared on a video recording. On each verbatim transcribed interview and observation, a pseudonym name was used. All gathered data are maintained digitally on my computer, which is password protected, and in a locked file cabinet to which only I have access. I destroyed all audio recordings once transcription had occurred and verification of accuracy of transcription was completed.

Researcher's Role

Early in my doctoral degree course work, I became interested in pedagogies that enhanced the thinking ability of nurses. My interest stemmed from the belief that nurses are at a disadvantage when they become educators. As a profession, nurse educators are first educated and trained to be nurses not educators. The lack of formal education that focuses on the theoretical underpinnings of how students learn appears to be lacking within graduate-level nursing programs.

Postbaccalaureate education of nurses traditionally has focused on advancing nursing practice not on educational theory. A nurse can be an excellent clinician, however, that does not equate necessarily to a successful nurse educator. An effective nurse educator must master the art of teaching, something that can be neglected in some postbaccalaureate nursing education programs (Shell, 2001; Valiga, 2003). As the researcher in this study, I have attempted to be an unbiased observer, collector, and analyzer of data. My current position as a nurse educator (6 years) in a baccalaureate school of nursing and my role as a staff nurse (25 years) in an acute-care hospital has offered insight into the pertinent questions and data-gathering techniques needed to succeed in the maintenance of theoretical sensitivity. As a result of that same professional experience, however, a potential for researcher bias is possible.

In an attempt to maximize accuracy and minimize bias, the path from observed findings to stated results has been documented. I took steps to remove personal judgment from the collection, analysis, and results interpretation. Viewing collected data from multiple perspectives assisted in the accomplishment of removing personal opinions from the investigation. Upon reporting of findings, clear descriptions that are rich in detail have been attempted. The links made between the two guiding conceptual frameworks and collected data offer conceptualizations of what the nurse educator's pedagogies in this study reveal.

Data-Collection Procedures

One of the inclusion criteria was based on demographic information that stipulated that the participant at the time of the study was teaching a didactic course in an undergraduate baccalaureate nursing program, in the state of California. The use of all three pedagogies-- concept mapping, case studies, and reflective-thinking exercises-- also was an inclusion criterion. One participant did not utilize the pedagogy of concept mapping as defined by my literature review. I decided that because the interview and one observation already had been completed she would remain in the study, but a fourth participant would be added to the study. Therefore, a fourth participant was recruited successfully by the participant herself.

Collection of data was threefold: it included one initial interview, three observations of lectures with three debriefings immediately following the observations, and the obtaining of pertinent course documents from each participant. Site visits took place starting in early March 2009 and culminated in May 2009. Three site visits per participant took place. All interviews and observations were conducted at a place and time convenient to the participant. Pseudonyms are utilized with all data-collection tools. An explanation of each data-collection tool is provided in

the next section of this chapter. A guide to data-collection tools with a timeline and rationale for their use is provided in Table 2.

Table 2
Timeline of Data-Collection Tools and Rationales

Data Collection Tool	Rationale	Timeline of use
Demographic information (Appendix C)	Demographic information assists in defining participants. Allows researcher to know participants' educational background, duration of teaching, and type of didactic classes taught.	Sent via electronic mail prior to first site visit March 2009
Instructor's teaching approach (Orientations to Teaching Questionnaire)	Offers insight into conceptions of teaching and learning that each instructor might have on lecturing in a higher-education environment. Use as an inclusion criterion.	Sent via electronic mail prior to first site visit March 2009
Course documents (Syllabi, Handouts)	Assists in gaining insight in participants' preplanned teaching pedagogies.	Received them via electronic mail or as a hard copy at the time of first site visit March/April 2009
Interview (one) (Appendix E)	Offers insight into conceptions of teaching and learning that each instructor might have. Allows researcher to understand participants better. Enables data collect that can be linked to the conceptual framework of the study.	At first site visit before first observation March/April 2009
Observations (three) (Appendix F)	Allows for first-hand viewing of effective educator implementing learner-centered pedagogies.	Three separate site visits March – May 2009
Debriefings (three)	Used for clarification of observed pedagogy – Video recording or other observed behavior explained	Follow up to the three separate site visits March – May 2009

Interviews

One initial interview session was completed upon initially meeting my participants. The interview was semistructured and took place during my first site visit with each participant. (Appendix E). Questions were asked that probed into the pedagogy of each participant. Attempts were made to gain insight into the underlying rationale for the implementation of specific pedagogies. During the interview, I viewed the participants holistically, allowing communication between us to be open. The interviews were approximately one hour in length. Interviews were audio recorded and transcribed. Verification of transcription was completed and were deemed accurate. Three of the interviews for Avery, Ivy, and Yolonda were transcribed by the professional transcriptionist who I hired. The interview with Amy, however, took place in a restaurant and had to be transcribed by me, because it was difficult for the professional transcriptionist to differentiate my and Amy's voices above noise of the restaurant.

Observations

Observations were not performed on sensitive dates such as testing dates or student presentation days. Classroom observations were audio recorded. Each audio recording of an observation was verbatim transcribed by a professional transcriptionist, verified for accuracy, and then destroyed by me. Also, with consent, brief video recordings of the participant interacting with students during class were made. The video-recording device was a Sony Handycam ®. The mini-video recordings were only to clarify interactions that the participant demonstrated during class. No students were video recorded. Field notes were made as to what components of the conceptual frameworks guiding this study were evident in the observations. Upon returning to my hotel room, I immediately audio recorded my field notes. My recorded field notes were transcribed, verified, and then destroyed.

The purpose of the observations was to gather data pertaining specifically to how the participant nurse educators were implementing the teaching techniques that are associated with learning at a higher level. In other words, how were they using the teaching methods of concept mapping, case studies, and reflective-thinking exercises. During the lecture observations of the nurse educator, I did not participate in class discussion; I only observed.

Debriefings

Debriefings were used as a clarification session. They were 10 to 15 minutes in length. Following each of the three classroom observations, a brief debriefing session took place; these sessions were audio recorded and transcribed. The reviewing of observed interactions, either video or audio recorded, were discussed between researcher and participant as deemed necessary for clarification. These discussions either took place in the empty classroom or in the participants' offices.

I destroyed the video recordings immediately after a clarification was achieved from the participant. If during an observation a part of the participant was video recorded, the recording was discussed during these debriefings sessions and then destroyed.

Course Documents

Course documents included course syllabi, assignments, study guides, evaluation procedures, presentation outlines or lesson plans, and PowerPoint® slides. All the course documents were supplied by the participants themselves either electronically or paper copies. I utilized the course documents to further understand the pedagogies utilized by the participants.

Instrumentation

The data-collection tools proposed include demographic information (Appendix C), course documents used by the participants, and the Orientations to Teaching Questionnaire.

Orientation to Teaching Questionnaire

The Orientations to Teaching Questionnaire was used with permission from Dr. Kember (Appendix G). The creation of the questionnaire was the gateway to Kember and Gow's (1994) research on learner-centered education. It was created with the goal of substantiating their hypothesis that those educator's who approached instruction with a focus on learning, rather than teaching, would realize an increase in learning at a higher level of cognition.

The purpose of the questionnaire was to identify the teaching approaches of lecturers who teach at institutions of higher education. The developed questionnaire resulted in the identification of two orientations to teaching: learning facilitation and knowledge transmission. The goal of the questionnaire is to identify instructors who viewed their role as a facilitator of learning rather than a transmitter of knowledge. The belief was that meaningful learning that went beyond memorization was inspired by lecturers who established the facilitator role. The assumption was stated that those educators who were facilitators also taught their classes with a learner-centered approach rather than an instructor-centered one (Kember & Gow, 1994).

Kember and Gow (1994) stipulated that instructors are not 100% learner facilitation or knowledge transmission in their orientation. Each instructor will demonstrate a certain percentage of both approaches to teaching a college-level lecture course. An educator, however, will score a greater percentage of points toward one or the other orientation. Thus, aligning him- or herself with either a learner-center approach to teaching that is termed *learning facilitation* or with a teacher-centered orientation that is termed *knowledge transmission*.

Preliminary steps to develop the questionnaire, according to Kember and Gow (1994), were developed initially by semistructured interviews with 39 lecturers at a polytechnic

university. Transcripts were reviewed by three independent researchers for constructs related to orientations of teaching. Originally 14 categories were identified. After the establishment of the 14 categories, they developed a trial questionnaire that incorporated corresponding subscales. To ensure contextual validity of the questionnaire, wording used within the questionnaire was identical to the terminology collected during the initial interviews of the educators (Kember & Gow, 1994). Table 3 is an example of wording on the final version of the questionnaire.

Table 3
Summary Data on Final Version of the Orientations to Teaching Questionnaire

<i>Subscales</i>	<i>Cronbach Coefficient α</i>	<i>No. of Items</i>	<i>Sample Item</i>
<i>Learning Facilitation</i>			
Problem solving	.71	7	After completing a course students should be able to analyze a situation and display logical and rational thinking.
Interactive teaching	.74	7	In my teaching I have tried to develop participation from the students to make it more lively.
Facilitative teaching	.77	5	I guide students in learning rather than force things down their throats.
Humanistic interest	.75	4	A good tertiary lecturer is someone who cares for the students and is in tune with their problems.
Motivator of students	.76	4	A successful lecturer is able to enthuse students.
<i>Knowledge Transmission</i>			
Training for specific roles	.62	5	A most important function of higher education is to produce graduates for certain professions within a community.
Greater use of media	.71	4	Information can only be properly presented if audio-visual materials are used.
Imparting information	.69	5	A lecturer imparts information to the student.
Knowledge of subject	.72	5	A sound knowledge of their discipline is vital for all academics

The trial questionnaire ultimately contained 84 items that made up 14 subscales. A 5-point Likert-type scale that progressed from *definitely agree* to *definitely disagree* was distributed to multiple lecturers who had not participated in the first interview process. The return rate was 49.7%. A total of 74 usable questionnaires were returned. Interitem correlations were examined. After the examination of the trial version, the final version of the questionnaire was modified into a 46-item nine-subscale version. To delineate the two orientations (learning facilitation and knowledge transmission), the researchers revisited the original interview transcripts before wording the questions on the final version of the questionnaire (see Table 3).

The final 46-item nine-subscale version of the questionnaire was administered to lecturers at a comparable university. The return rate for the final questionnaire (29.7%) was considerably lower than that of the trial questionnaire. With 170 usable questionnaires returned, however, the sample size was large enough to perform a reliability analysis. The Cronbach coefficient alpha reliability for the nine subscales ranged from .63 to .77, which is acceptable for this type of inventory (Popham, 2000).

The subscales of the final version were defined after the utilization of maximum likelihood factor analysis extraction, a factor analysis that was based on a small sample (n=170) limits the analysis validity. The factor analysis extraction and the summary of the final version of the questionnaire's Cronbach coefficient alpha values are represented in Table 4 (Kember & Gow, 1994, pp. 62, 65). Utilization of this questionnaire adhered to the subscales designed by Kember and Gow.

The subscales for the orientation "knowledge transmission" are training for specific roles, greater use of media, imparting information, and knowledge of subject; for "learning-facilitation" orientation, the subscales are problem solving, interactive teaching, facilitative teaching, humanistic interest, and motivator of students (see Table 4).

Table 4
*Factor Loading from the Factor Analysis of Final Version of
 Orientations to Teaching Questionnaire*

Subscales	Factor 1 Learner-centered Learning facilitation	Factor 2 Teacher-centered Knowledge transmission
Problem solving	.70	
Training for specific roles		.40
Interactive teaching	.64	
Greater use of media		.32
Facilitative teaching	.78	
Imparting information		.96
Knowledge of subject		.43
Humanistic interest	.60	
Motivator of students	.87	

The questionnaire is made up of 46 items that are presented in Likert scale format. Responses range from *definitely agree*, which is assigned a point value of 5 points, *agree with reservations* which is the 4-point response. The *neutral* 3-point response is to be selected only if it is impossible to give a definite answer or the item does not apply. The 2-point response is associated with the statement *disagree with reservations*. The last possible response is worth one point and indicative of a *definitely disagree* response. There are 19 items that correlate with the knowledge transmission orientation and 27 for the learning facilitation orientation. To tally the responses, the unevenness of the total number of items is taken in to account by utilizing percentages. The total point value for the knowledge transmission orientation is 95 possible points and for leaning facilitation orientation, there are 135 points possible. Percentages were calculated by dividing the individual score in each orientation by the maximum possible points and then the value is multiplied by 100 (Kember & Gow, 1994).

Each participant in my investigation scored a higher percentage on the subscale learning facilitation than they did on knowledge transmission. The difference in the percentages associated with learner-centered orientation or learning facilitation and the teacher-centered knowledge transmission orientation for my participants are listed in Table 5.

Table 5
Participants Orientation to Teaching Questionnaire Percentage Scores

Pseudonym	Learner-centered Learning facilitation	Teacher-centered Knowledge transmission
Ivy	94%	76%
Amy	92%	78%
Avery	86%	64%
Yolanda	90%	77%

Research Questions Restated

1. How are effective nurse educators implementing the pedagogies of concept mapping, case studies, and reflective-thinking exercises in undergraduate didactic courses?
2. How do effective nurse educators perceive that these pedagogies are enhancing learning at a higher level of cognition?

Data Analysis

Qualitative case-study design is described as an inductive process (Bogdan & Biklen, 2007; Creswell, 2007; Merriam, 1998). The intent of a multisite case-study approach to qualitative research is to perform an in-depth holistic exploration of a bounded system (Creswell, 2007). In this instance, the bounded system involves nurse educators who were teaching in undergraduate didactic courses at baccalaureate schools of nursing in the state of California at the time of the study. Creswell (2007) presented an analogy to data analysis as that of a spiral. Each spiral of data analysis is custom built specifically for the bounded system being studied

(Creswell, 2007). The spiral is seen as a continuum and only has an end point when themes are seen repetitively. Figure 3 is a representation of the spiral data for my dissertation.



Figure 3. *Spiral Data Analysis: Teaching Pedagogies of Nurse Educators*

First Loop of Analysis

The initial loop, on my spiral analogy, represents the organization of transcribed documents. The fundamental units of analysis for this study are the pseudonym-identified verbatim-transcribed data collected from the following instruments: interviews, observations, course documents-with summaries of how the documents are utilized, and observational field

notes. Organization of data was accomplished within the first loop of the analysis by creating computer files of transcribed documents. Printed copies of transcribed raw data were maintained in a locked file cabinet.

During this first loop of analysis, all transcribed documents were imported into the computer program NVivo8. The transcribed documents were placed into NVivo8, and categorized by four sources. The sources were Interviews (I), Observations (O), Field Notes or Thoughts (T), and Documents (D).

The computer program NVivo8 was developed by Qualitative Solutions Research (QSR) and provided assistance with the coding. NVivo8 allows for the storage of massive amounts of data. The computer software does not decide codes. The coding process was completed by the researcher. Essentially the purpose of the computer software was to store and retrieve files, thus providing maximum viewing of potential emerging categories and themes. The immediate retrieval of stored data from the computer software enabled me to easily create visual representation of data. The ability to cross analyze cases was enhanced by NVivo8; it allowed increase ease of pattern recognition (Creswell, 2007; Patton, 2002). Within NVivo8, coded files are called *nodes*. Therefore, my computer generated coded files will be termed *nodes*, as this is specific to NVivo 8 software

Second Loop of Analysis

Within the second loop of the spiral analogy, initial coding was accomplished. Coding initially was performed by careful examination of the words stated by each participant during all interviews. The term repetitive comparative analysis often is utilized to describe this type of examination process (Creswell, 2007; Patton, 2002). All responses stated by the participants, including those recorded following the observational visits, were coded into a computer

generated NVivo8 node. These initial nodes were named according to the interview questions (Appendix E). Each node was then re-examined line-by-line; subsequently some nodes were collapsed within others as deemed appropriate. Once all the participants' interview responses were coded into an appropriate NVivo8 node, further coding was accomplished by examining line-by-line the transcribed observations, field notes, and pertinent document notes. Thus, all data sources were represented within nodes stored in the computer software program NVivo8.

Third Loop of Analysis

Repetitive comparative analysis was continued during the third spiral. The retrieval capabilities of NVivo8 allowed for comparison of initial nodes, assigned during the second loop of the analysis, with the two research questions of my dissertation. The continued immersion and reflection of stored data enabled me to put back together the data in a new way that allows for the conceptualization of how the participant nurse educators were implementing the pedagogies of concept mapping, case studies, and reflective-thinking exercises. Research question two was then given specific attention; the question was compared to all initial nodes with a line-by-line approach. The term applied to the regeneration of these conceptualizations into emerging themes, within NVivo8 software, is *tree-nodes*. Thus during the third phase of my data analysis, emerging themes that related specifically to my research questions, were visualized. These emerging themes are termed tree-nodes within NVivo8 software.

Fourth Loop of Analysis

The fourth and final loop of the spiral analogy of data analysis allows for final themes to be presented and assertions to be made (Creswell, 2007). During this phase of data analysis, a pulling together of the conceptual framework and the research questions occurred while comparing the tree nodes or emergent themes stored in NVivo8. After continued comparative

analysis some tree nodes were collapsed and ultimate themes were identified as they pertained to the two research questions of my investigation.

The initial two spiral loops of my investigation are focused on inductive thought processes; the third and fourth loops are deductive in that the theoretical framework for the study was woven into the theorizing process (Patton, 2002). The computer program NVivo8 allows for the collection of finalized reports. The finalized reports allowed me to see the raw transcribed data in an organized presentation, thus the ability to visualize propositions and ultimately themes was made easier.

Trustworthiness and Dependability

The trustworthiness of this study lays in its ability to report findings accurately and without bias from its fieldwork. Creswell (2007) described several key strategies that enhance consensual validation. A summary of these research techniques, which are embedded within this study, are presented and explained. The first technique that encourages accuracy of reported findings is to ensure that the researcher spends ample time with participants in their environment. By visiting the participants three separate times that were convenient to them and plus the visits were within their own educational setting, the contacts with each participant were maximized. The collection of several types of data, interviews, observations, and documents, is seen as a second strategy that facilitates the dependability of my qualitative research study (Bogdan & Biklen, 2007; Merriam, 1998). The use of multiple data-collection sources, as stated previously, is a form of triangulation. Also, a form of triangulation that my study incorporated is the fact that data collection will take place from multiple educational sites (Bogdan & Biklen, 2007; Merriam, 1998). Triangulation is an essential process that strengthens data analysis within

qualitative research. It was taken from the concept that, to survey a situation, it is beneficial to have multiple points from which to reference one's results (Patton, 2002).

A third strategy that facilitates trustworthiness is the use of what often has been termed "member checking" (Creswell, 2007, p. 208). According to Creswell, the solicitation of the participants' views on their respective in-depth case synopses increases credibility of the findings. At the end of each interview and lecture observation, I was able to clarify field notes with each participant. A report was written for each participant. Participant validation was requested and received. The last external system check was a peer-review process. A form of debriefing with an independent colleague was performed periodically during the analysis process. The individual who reviewed my coding process is a faculty member within the school of nursing where I teach. She is a tenured doctorate prepared individual who has published both qualitative and quantitative investigations multiple times in journals of nursing. She reviewed my NVivo files on three separate occasions and advised me that the coding process was cohesive. Written accounts of these sessions have been kept for posterity. The peer-review sessions were meant to provide the researcher with alternative views regarding the data analysis. Reliability, or, as termed in quantitative research, consistency, also was maintained by keeping detailed organized field notes that are understandable and presentable for peer review. The next chapter, chapter four is a presentation of the results of my investigation.

CHAPTER IV

RESULTS

The purpose of my study was to investigate the pedagogical practices being implemented by nurse educators teaching didactic courses at baccalaureate schools of nursing in the state of California. Three specific pedagogies were the focus of my research. They were concept mapping, case studies, and reflective-thinking exercises.

The participants of my study have adapted their teaching strategies to take into consideration the 21st-century practice of nurses. They have made this adaptation by altering their teaching methods to create an academic environment that is learner centered. A learner-centered didactic classroom environment is believed to facilitate thinking at a higher level of cognition (Del Bueno, 2005; Scheffer & Rubenfeld, 2006; Tanner, 2000, 2006; Valiga, 2003). It has further been stipulated, within the previous chapters of this dissertation, that a higher level of cognition is needed for the advancement of nursing students into the professional practice of a registered nurse. The three pedagogies investigated within my study are considered learner centered (American Association of Colleges of Nursing (AACN), 2009 p.17).

This chapter presents the findings of my investigation as they related to my research questions. Initially offered are descriptions of each participant and her classroom environment. Results are then made available in the form of themes and are arranged for presentation by their responses to each of the two research questions and by the specific pedagogy involved. Pertinent additional findings that subsequently were noted are offered.

One interview and three observations, with debriefings, were utilized to enlighten each participant's implementation strategies of the three pedagogies: concept mapping, case studies, and reflective-thinking exercises. Participants initially were interviewed by adhering to a semistructured protocol (Appendix F). Each interview with my participants was 30 to 40 minutes in length. The primary focus of inquiry for each interview was the use of the three pedagogies and the reasoning for their use. In other words, I focused the interviews on answering my research questions.

This interview was followed by an observation of the educator implementing these pedagogies within her classroom. Two subsequent observations, with brief postobservation or debriefing discussion meetings, were performed. A total of three site visits for each of the four participants ultimately were completed. The greatest amount of time spent, with each participant, was during my observations of them in the classroom. Observations were three hours except for one of Yolonda's observation which was a two hour observation of her physical assessment course. All of the site visits took place during the months of March through May of 2009. The focus of each of the site visits was to answer the research questions of my study. Throughout this chapter, I will refer to my participants by pseudonyms (Table 1 in chapter III p 66).

Participant Description and Classroom Environment

A brief synopsis of each of my participants is promised in this section. The information obtained for the synopses was obtained within the initial interview and during the debriefing sessions and reflect the interview questions (Appendix F).

Amy

Amy, an instructor at a public Central California baccalaureate school of nursing just recently had completed her doctorate education. She has been a nurse for 20 to 25 years and an educator for 7 years. She is currently tenure-track and teaches two courses. The courses she teaches are Obstetrics and Research. She was not teaching a clinical course during the semester she was interviewed. Amy and I met for our initial interview at a local restaurant. She described her teaching style as “interactive.” She related that it is important for educators to stay current with “what is going on in nursing.” When asked what a typical class meeting would be like, she responded that she does depend on traditional PowerPoint ® format for her Obstetrics course but also “changes things up” whenever possible. According to Amy, her Research course is more “student centered.” She relates that within this course she primarily uses case studies “to get her point across” regarding nursing research concepts.

I was able to observe Amy during one of her Obstetrics classes and two of her Research classes. Both of Amy’s classes are 3 hours long and meet once a week. Amy held her courses in two separate classrooms. The Obstetrics class was held in an average size, older classroom; however, it was equipped with portable Smart classroom equipment that consisted of a computer laptop and projector. The equipment was on a portable stand. No overhead projector was included and no internet capabilities were possible.

The room was filled with wall-to-wall desks that were the typical slide-in type. Thirty students were in attendance; according to Amy, this number is five short of her enrollment. The classroom was crowded; however, Amy was still able to accomplish

group work seamlessly. The Research class that Amy taught was held in the same building; however, it was held in a smaller classroom. It did contain a portable stand that had laptop and projector on it. There were 10 desks and 9 students in this class. There was barely room to walk around the desks.

Avery

Avery teaches a basic Medical-Surgical course at a private Southern California baccalaureate school of nursing. She does teach a clinical course at a local hospital and is the lead faculty member for the course, which means she is in-charge of the other clinical faculty who teach at the hospitals for that semester. Avery shared that there are five adjunct clinical faculty members who report to her. Avery is working on her dissertation and plans on completing her doctorate degree within the next year. She has been a nurse for almost 10 years and an educator for less than 5 years. She is employed as a term faculty with a 3-year contract.

I was able to interview Avery in her office. She described her teaching style as “blended.” She reported that she does utilize a PowerPoint ® lecture format for part of the class time but related she will always incorporate a case study, reflective-thinking exercise, or concept-map exercise within the class “to get students thinking.” I attended three of Avery’s Medical-Surgical classes. She has 45 students and holds her class in a modern building in the center of campus. The classroom is a spacious Smart classroom. The control table for Smart classroom equipment is permanent. The controls allowed the instructor to project from a computer, compact disk, VHS movie, or overhead projector. Internet capability was possible. The room was furnished with long half-

circular tables with power outlets spaced evenly throughout. The chairs were swivel with comfortable arm rests. Avery's class meets once a week and is 3 hours long.

Ivy

Ivy is currently a faculty member at a private baccalaureate school of nursing in Northern California. She teaches two didactic courses: a Pathophysiology-Pharmacology course and a basic Medical-Surgical course. She was not teaching a clinical course during the semester she was interviewed but has taught a clinical course in the past. She is tenure-track and is pursuing a doctorate degree. She has been teaching for over 5 years and has been at this particular school of nursing for all of her teaching years. She has been a registered nurse for over 25 years and a nurse practitioner for 10 years. Our initial interview took place in her office on campus.

When asked how a typical class meeting progressed, she stated that she usually began class with a traditional lectured format this is a PowerPoint® slide presentation. She explained that this type of format was adhered to only for approximately the first hour of her 3 hour class. After the traditional format was completed, she stated she would then implement some type of activity that "gets the students active." I was able to observe Ivy during two of her Medical-Surgical class times and also once during her Pathophysiology-Pharmacology course. Both courses are 3 hours long and meet once a week.

Ivy's classes were held in two different classrooms; however, both were comparable. The classrooms were modern, Smart classrooms, with long tables arched in a semicircular fashion. The Smart classroom set-up was identical to Avery's. The tables each had multiple power outlets placed within them for computer use. The chairs

were comfortable and well spaced apart. The room seated approximately 50 students and Ivy had 36 students in her Pathophysiology-Pharmacology course and 40 in her Medical-Surgical course.

Yolonda

Yolonda teaches a Pathophysiology and a Physical Assessment course at a Northern California public baccalaureate school of nursing. I interviewed Yolonda in her office on campus. She does not teach a clinical course and has not for over 15 years. She has been a registered nurse for over 25 years and a nurse practitioner for over 15 years. She has been an educator for more than 20 years and is working within a term position that is contracted. She has a Masters in Nursing degree.

Yolonda describes her style of teaching as “facilitative.” A typical class meeting, according to Yolonda, would include an hour of lecture and then some form of activity that “facilitates the understanding of what was just discussed.” I was able to attend two of Yolonda’s Pathophysiology classes and one of her Physical Assessment classes. The Pathophysiology course is 3 hours long and the Physical Assessment course is 2 hours long, both meet once a week.

Yolonda’s classes were held in the same classroom; however, the Physical Assessment class moved to practice in the learning laboratory after Yolonda was finished with her PowerPoint® lecture. The classroom was stadium style with fixed desks that had a swing table arm attached. The classroom seated 70 students, and Yolonda had 65 students in both of her classes, so the room was crowded.

Not having the capability to move the desks was a distinct disadvantage, according to Yolonda. A hospital bed with a manikin was off to the side of the front of

the classroom. Yolonda stated other instructors used the manikin for skills demonstration and simulation, she did not. The building was older; it was a Smart classroom with similar set-ups to Avery's and Ivy's.

All four participants were welcoming and supportive of my quest for identifying how the three pedagogies were being implemented in their didactic course. They willingly sought the best days for me to attend their lectures. Avery even changed a planned content date so that I could attend. For each of the observation days, I quietly sat in the corner of the classroom. Each educator did introduce me as a doctorate student studying the instructor teaching and not the students. As previously stated, the greatest amount of my time with each participant was within the classroom observing them in action.

Results

Themes are now presented in pedagogical order as they relate to research question one, followed by a presentation of themes as they related to research question two. Two subsequent teaching strategies are reported as additional findings. The interview responses, observations, debriefings, and field notes are incorporated into the transcribed data. Excerpts from the interviews are presented to clarify themes.

Initially all of the participants had expressed an understanding and use of concept mapping, case studies, and reflective-thinking exercises. Upon completing my first interview and observation with participant Amy, it became apparent that her use of the pedagogy concept mapping was not of the nature defined within my study. I decided to retain her in the study, but a fourth participant was recruited; therefore, for the pedagogies of case studies and reflective-thinking exercises, input from four

participants is presented. For the pedagogy concept mapping, only three participants will have a voice in the findings.

Research Question 1

How are effective nurse educators implementing the pedagogies of concept mapping, case studies, and reflective-thinking exercises in undergraduate didactic courses?

This research question was designed to bring into view the actual implementation strategies being employed by the participants when the pedagogies in question were utilized. A total of six primary themes emerged from the analysis of the data that addressed this research question; however, two of the primary themes have been subdivided into two secondary or subthemes each. Pedagogies are presented along with corresponding themes in Table 6.

Table 6
Themes Presented by Pedagogy Research Question 1

Pedagogy	Theme
Concept Mapping	1. Student Generated 1a. Formative 1b. Summative 2. Instructor Generated
Case Studies	3. Formal Implementation 3a. Within the Classroom 3b. Outside of the Classroom 4. Informal Implementation
Reflective-Thinking Exercises	5. Shared with Classmates 6. Shared Exclusively with Instructor

The first pedagogy to be offered is that of concept mapping. First a brief overview of the pedagogy of concept mapping and how the participants were implementing

the technique is presented and then the specific themes of *student-generated* and *instructor-generated* concept mapping are presented.

Concept Mapping

Two primary themes emerged from investigating how my participants were implementing the pedagogy of concept mapping. The first theme was student-generated concept mapping, and the second theme was instructor-generated concept mapping. The first theme of student-generated concept mapping is further divided into two sub-themes. These two subthemes are *formative* and *summative* student-generated concept mapping.

Following is a presentation, along with examples, of how each of the participants' implemented the pedagogy of concept mapping. For the pedagogy of concept mapping, Amy will not be represented. Presented initially will be an explanation of how the first theme student-generated concept mapping is implemented by the participants. The subthemes of formative student-generated concept mapping and summative student-generated concept mapping are related.

Student-generated Concept Mapping

Each participant related that student-generated concept mapping was a key implementation strategy for improving her students' vision of how nursing care is linked to all aspects of a patient's healthcare situation. Each participant stated she provides ample "how to map" instructions to her students at the beginning of her course. Online sources are provided to them along with guidelines and examples. Ivy demonstrated on the first day of class how to concept map by mapping a Thanksgiving dinner.

Avery described her two assignments, associated with concept mapping, as a cognitive map of a specific topic rather than a concept map. Avery uses the maps in two different modes. One concept-mapping assignment is designed as a group project that is not graded and is impromptu within the class setting. She also employs an individual concept-map assignment that is graded. Avery supplies the students with a rubric to assist with the creation of the graded map. Avery was quick to inform me that she assigns the group nongraded concept map before the individual graded ones so the students understand what is expected of them before receiving a grade.

Yolonda utilizes the concept-mapping assignment as an individual project that is graded and is due midsemester. Yolonda stated that she warns the students that they will not be able to turn in their first draft of the map. She related that several drafts will need to be developed and revised before the final map is in an acceptable form.

Yolonda further informed me that she gladly reviews maps in progress to ensure students are on the right track. She also utilizes a rubric for the students' grading awareness. On one of the days I observed her, she brought in several concept maps from previous semesters so that the students would be aware of her goals for their map assignment. The assignment in Yolonda's class is worth 10% of their grade. She does not require any other concept-map assignment.

Ivy utilizes a group format for her concept map assignment and an individual format for her formative concept maps. Ivy's group concept map assignment is graded and is due during the last month of the semester. As with Yolonda, Ivy encourages the students to show her their graded concept maps as "maps in progress" and relates that several drafts will need to be completed before the assignment is done. Ivy also utilizes

formative individual maps throughout the semester by requiring students to map case studies that she presents during class.

All three participants, Avery, Yolonda, and Ivy, give explicit guidelines or rubrics to the students. Each participant has a set of key requirements that need to be included in his or her map. For instance, Avery and Ivy require that the students include the pathophysiology, medical diagnoses, nursing diagnoses, interventions, goals, evaluations, medications, and diagnostic tests (such as laboratory and radiological results) within their maps. Yolonda does not require the nursing process aspect to be included in her students' maps; however, because she teaches pathophysiology, she requires an in-depth pathophysiology process. She tells the students to take the process down to the cellular level.

All three participants require that their graded maps must be completed on a poster-size paper. Each participant adhered to the Daley (1999) format of representing the priority of topics from top-down approach. The maps had to be organized in such a manner that linking words and relationships between the key topics were clear and appropriate. As Yolonda stated, however, the students needed to make sure they did not become carried away with their linking of concepts. For example, Ivy related that it was crucial that she be able to see how the students linked the pathophysiology to the medical diagnoses and then, in turn, how the medical diagnoses related to the nursing diagnoses. Nursing interventions then had to link to the appropriate diagnoses and so forth. The maps, according to each of the participants, could be generated with marking pens, typed words, or pictures that are then pasted onto the poster board. Ivy also encourages her students to use small sticky notes with writing on them for their

rough drafts so that they may move concepts and linking words until the appropriate relationship are represented. Following is a clarification of the first subtheme of student-generated concept mapping: *formative* use.

Formative use of student-generated concept mapping. Each educator used formative student-generated concept mapping within her course. Yolonda and Ivy utilized the method each time they allowed their students to bring in his or her maps that were “works in progress.” In other words, each time a student brought in his or her map to Ivy and Yolonda, which was to be submitted for a grade, they were receiving formative guidance regarding their map. Another formative implementation strategy of student-generated concept mapping is utilized by Ivy.

This use of formative student-generated concept mapping was a participation experience and was not graded. The implementation of this assignment takes place throughout the course, and Ivy believes that it is a useful method for actively engaging students in the learning process. I was fortunate to have observed Ivy perform this strategy. She initiated the assignment by first presenting a case study. The case was discussed in its entirety with the class as a whole. Once the discussion was over, each student was to begin to create a concept map of the case on a half-sheet of poster paper that was supplied by Ivy. Again, this concept map was not a graded assignment. During this 20- to 30-minute activity, Ivy walked around the room and offered assistance. Students were allowed to converse freely with each other. The students were able to keep the maps. This implementation strategy was an individual project; however, Ivy encouraged students to work together, and conversations were to be heard throughout the classroom.

Avery, however, used a different approach for a formative student-generated mapping assignment. During my second site visit with Avery, I was able to witness how she implemented her concept-mapping assignment. The students were unaware of the assignment and were only told that they should bring reference books or computer laptops to class that day. Upon arriving to class that day, the students were told about the formative assignment. Avery assured her students that participation was the key and not how well they performed the assignment.

Initially, class started out as usual that day. The topic of the day, which was gastrointestinal disease process, was presented in lecture format utilizing PowerPoint® slides. The duration of this lecture presentation was 50 minutes. The students were given a break and then asked to return to class and form groups with five students per group, which they did. Once each group was in place, Avery taped poster-size papers, which were spaced apart, to the walls of the classroom. Each group was assigned to map one of the topics they had just covered. They were to include on the map a brief pathophysiology, nursing diagnoses, interventions, goals, and evaluation methods of the assigned gastrointestinal disease process.

Avery gave the students 30 minutes to construct their maps and walked around to each group to answer any questions and provide feedback on the creation of their maps. I also was able to walk around and listen to the students conversing and organizing their assignments. I was impressed by the group dynamics of the ulcerative colitis group. Members were piecing together the priority nursing interventions and attempting to make connections of the treatment regime. A lively discussion ensued regarding where the nursing priorities should focus. Following the 30-minute

completion of the map, each group presented their map to the entire class. The presentation time for each group was approximately 15 minutes. During the presentations of the students maps Avery

Summative use of student-generated concept mapping. Each participant required her students to create one student-generated map that was submitted for a grade; each educator required only one graded concept map per semester. Ivy's requirement was a group effort, whereas Avery and Yolonda required an individual assignment. The maps were graded according to rubrics that all three instructors provided the students with their syllabi. Each of the participants' rubrics guided the students by providing their grading criteria for the maps. For instances, Ivy's rubric instructed the students to include the patient's pathophysiological disease process, along with pertinent pharmacology findings.

The rubrics also delineated other components of the map such as nursing diagnosis and physical assessment findings. In review, student-generated concept mapping was found to be a theme of specific implementation strategy utilized by my participants. The next theme concept mapping that is instructor-generated is presented.

Instructor-generated Concept Mapping

During my observations, both Ivy and Yolonda utilized concept mapping to clarify complex nursing content. Yolanda's approach was more spontaneous. She utilized the whiteboard and multiple colors of dry-erase markers. Her classroom setup allowed her to keep her PowerPoint® slides displayed while using a conjoined large whiteboard to clarify specific content. Yolonda stated that she "uses the maps to help the students visualize the connections between key topics." An example was when

Yolonda drew a map to explain how seizure activity spread from the central nervous system to the neuromuscular junctions and then linked the medications prescribed to treat acute seizure activity.

As with Yolonda, Ivy used spontaneous map presentation but also had premade maps within her lecture that she presented to the students. Ivy had premade maps that she had highlighted in different colors. She would point out the interrelatedness of the topic under discussion. For instance, one topic Ivy lectured on during an observation had to do with brain trauma. She had a map that carried out the concept of palliative nursing care for a cerebrally impaired patient. The map was predrawn and was presented on a PowerPoint® slide. Avery incorporated concept maps that have been predrawn within her syllabus; however, she does not go over them in class. Within her syllabus, she has drawn, according to her, reference maps of complicated nursing care. Each of her maps are specific to nursing-care implementation goals. During one of her classes she did refer to one of her maps that was related to the gastrointestinal disease process of diverticulitis.

Within the school of nursing where Ivy teaches, concept mapping is started within the first semester and continued during the remaining 3 years of the nursing program. Whereas Yolonda and Avery were one of only a few educators at their respective schools of nursing who used the pedagogy of concept mapping.

Both Ivy and Avery made comments that they are working on the utilization of concept mapping via PowerPoint® presentation format. They want to be able to add a portion of the map to the slide to emphasize the dynamic relationship. Avery stated, she would like to build the map via PowerPoint® in front of the students. All three

instructors expressed that they will continue the use of concept mapping both in student- and teacher-generated format. They cited the process of mapping as the most important aspect of the map assignments. My fourth participant, Amy, was not implementing concept mapping in her course but was researching the pedagogy and had plans to implement it the following academic year.

Summary Pedagogy: Concept Mapping

The pedagogy of concept mapping was utilized by three of my four participants. Each of the participants used concept mapping primarily as a student-generated assignment. Informal, formative use of concept mapping was seen as beneficial because it forced the students to think creatively and critically at how specific nursing concepts were related. According to Ivy, it is the “process that is important.” The perceived benefit of concept mapping will be expanded upon later in this chapter as it directly deals with research question two.

The first theme that developed as an implementation strategy for concept mapping was student-generated mapping. Ivy, Yolonda, and Avery all used student-generated maps as a pedagogical format. Concept maps were used as a tool to enhance learning by implementing them formatively and then as a summative evaluation tool of higher level thinking skills. The second implementation method was that of teacher-generated concept mapping. Both Ivy and Yolonda drew spur-of-the-moment maps on a white board with dry-erase markers while in the classroom setting. These maps were presented during lecture to clarify a complex concept. Both performed this form of concept mapping during their lectures I attended. Avery was less spontaneous in regard to her concept mapping and instead utilized premade maps inserted in her

PowerPoint®. Amy, Ivy, and Yolonda utilized the pedagogy of concept mapping in a method that did appreciate all of the key components of the Information Processing Theory. They linked the new material being presented to previous material, they were organized, and the level of the material was appropriate. They were conscious of not overloading the students, and students were active in the learning process. As previously mentioned, Amy did not use concept mapping at the time of my investigation; however, she was in the planning stages of implementing them. The next pedagogy that will be presented is that of case studies, and is presented as it relates to research question one.

Case Studies

The implementation strategies of case studies by my participants yielded two primary themes. They were formal and informal implementation of case studies. The theme formal implementation of case studies also produced two subthemes: the use of case studies within the classroom and the use of case studies as an out-of-class assignment. By the term formal implementation of case studies, I mean that the case studies were preplanned and were in a written format. The students had access to the cases before being presented them during class or were given them during class either via a PowerPoint® slide or on a separate sheet of paper. The term informal implementation of case studies is meant to reflect the impromptu use of case studies that were related verbally during class time. They are not written down in any form. These informal case studies were a reflection of personal experiences of the nurse educators.

All four of my participants utilized case studies in these manners. Ivy's initial response, when I asked her about the use of case studies in her course, was a resounding "we start case study use from day one." She related that case studies are threaded throughout her class and reflect her commitment to bring "what the students will really see in the hospital environment" into the classroom. During each of my observation days, with all four participants, case studies were utilized in some format or another, either via a formal or an informal presentation.

Formal Implementation of Case Studies

Each participant incorporated formal case studies within her syllabi. Avery's case studies range from scenarios that deal with ethical-legal aspects of nursing to fluid and electrolyte complications with patients receiving intravenous therapy in an acute-care setting. Avery stated she is unable to present all of the cases listed or contained in the syllabus for her course due to recent cutbacks in number of the units for her course.

Yolonda and Ivy seconded Avery's complaint regarding a lack of time for reviewing all of the case studies supplied in her syllabi. Amy stated that in her maternal child course she has the same problem; however, in her research course, she is able to utilize a case-study approach with almost each class day. The first subtheme of formal use of case studies, is that of their use within the classroom, and is provided next.

Formal use of case studies within the classroom. At some point in time, during all four participants' lectures, they brought in a formal, pre-arranged case study to work on in class. Ivy's students do not have access to the cases prior to class. She brings them to class and passes them out, or as she did on one of my observation days she utilized a PowerPoint ® slide. The other three participants had all of their formal case

studies within their syllabi. It was related by Avery, Amy, and Yolonda that the goal would be to have the cases read by the students before class; however, often the students were not prepared.

The case studies represent a common situation nurses might find themselves in when caring for a specific patient population. Amy utilizes cases within the classroom by presenting a situation and then having the students carry on the case with impromptu role playing. For instance, one of her cases involved the students interviewing an expectant mother regarding illicit drug use before and during her pregnancy. Amy presented the case, providing background on the patient, and then has a student role play the interview process. As the case study unfolds further, she keeps the students active in the process by questioning the appropriate nursing interventions and the rationale for each intervention. Avery and Yolonda use a more formal methodology. Students are to bring in the case study to class and then, as a group, respond to pre-arranged questions. Yolonda will sometimes have the students break into small groups to work through a case. She did use this approach during one of my observations, after 30 minutes of the students working together in small groups to respond to the questions posed within the case study, she had the class come back together as a whole and each group discussed their responses. Each group had the same case study for this exercise. Avery implemented a similar use of case studies; however, each group had a different case study. All the cases were related to the general topic of the day: genital-urinary disease processes.

Ivy has a unique approach to formal case studies within the classroom. I was able to watch this process develop. Within Ivy's syllabus, the session is represented by

“case-study day.” Students are told that they need to bring their reference books and laptops to class. No other information is provided. When the day arrived, over half of the students had laptops, and all of them had numerous reference books.

The class started with Ivy having her students form pre-arranged groups of 9 to 10 students. She advised the students there would be no lecture, only a series of case studies that the students were going to analyze and present to the class. Ivy termed this case study approach a form of problem-based learning. She handed out a case study to each of the five groups.

One example of a case involved a Hispanic male who did not speak English, lived 70 miles away from the nearest hospital, and had to depend on family members for transportation. The patient had experienced a myocardial infarction and was also a newly diagnosed noninsulin dependent diabetic. The cases include other information such as vital signs, medication lists, laboratory results, and radiology findings. Each group had a different case to present. Once the cases were handed out, the instructions were initially to decide on three potential outcomes for each patient. They then had to prioritize the nursing interventions for each of the potential outcomes. Next, they were to come up with three questions they wanted to ask the entire class. Ivy allowed 60 minutes for the individual group work, then gave them a break and brought the class back together as a whole.

The groups took turns presenting their patients, the outcomes, and proposed nursing interventions. They led a discussion regarding the three questions they asked the class. The three questions the groups asked were a mixture of thought provoking types of questions and factual questions specific to nursing care. This second half of the

activity occupied the remainder of the class time, which was approximately 90 minutes. During the entire class, Ivy acted as a facilitator by visiting each group during the group work and simply organizing the group-presentation process.

The students were active and involved during the activity, so much so Ivy's voice was relatively silent during the course of the class. Occasionally, she would clarify a concept or encourage the students to think through an idea, but really it was a student-run class. Ivy stated to me after the class was over that it is crucial that the students already have had the content presented within the cases; therefore, she plans this activity for the end of the semester.

Yolonda and Avery provide formal, within the classroom, case studies by creating a preconceived case that is meant to stress a specific component of the nursing process. For instance, Avery uses a specific gastrointestinal case study that is meant to shed light on assessment and interventions of nutritional deficits. Both Yolonda and Avery provide students with a written scenario (it is in their syllabi that the students are to bring to class) and then elicit questions from the class as a whole. Students take notes and answer and ask questions. The process is completed within a 20- to 30-minute time frame. All of the formal within-the-classroom case study work is not part of the students grades.

Formal use of case studies outside of the classroom. All four participants utilize case study assignments outside of the classroom. Some of the case studies were assigned with grades given, and some were formative. One method utilized by Yolonda, Avery, and Amy was discussion board assignments. Case studies are posted on the course management system Blackboard ®. I was unable to view the discussion

board case studies; however, the participants related that they were similar in structure to the in-class cases. Avery utilizes this form of case study work the most with six separate cases to be read and responded to by the students. Amy, uses four cases in this method, and Yolonda only once during the semester. The discussion board responses from the students are monitored for participation points by the instructor. The students have a one- to 2-week time frame to respond to the cases. Amy uses this format with her Research class, which only has nine students, so she does not create groups as Yolonda and Avery do.

Yolonda and Avery, in addition, have included case studies in their syllabi that strictly are voluntary completion options. The cases, if completed, help the students with exams in their respective courses. They have found that the students who complete them perform better on the multiple-choice exams within their classes. Avery noted that, in the past, she would hold a one-hour case study session each week. During this session, they would review the cases in detail. The number of units her course is assigned has since been decreased so she is no longer able to hold this session. She now incorporates only six of the studies into her regular lectures. One of these cases also is used as a discussion board assignment. The rest of the five case studies are now optional in her syllabus.

Ivy utilizes outside of the classroom assignments in a slightly different manner. She supplies the students with three case study options. The ones she showed me were all on neurological conditions. The students have the choice of which case studies they want to analyze which is not a group project. Students take the case studies home and

work on them. She gives each student a template of how the case should be presented. She limits them to a maximum of 1200 words.

According to Ivy, this limit is approximately four double-spaced typed pages. There are specific questions the students are required to answer within the template. After the case study template has been completed, the students create a concept map incorporating all aspects of the study. Ivy believes she incorporates this combination of case studies and concept maps with topics that are complicated or with topics that she might not be able to cover during regular lectures. The concept maps are not graded, but the case studies are.

Amy's outside of class case studies are termed "concept-analysis assignments." For this assignment, the students choose a patient they have had in clinical that semester and then write a case presentation about a specific concept that they have seen this patient exhibit or not exhibit. According to Amy, she gives them some ideas of concepts, such as "self-efficacy," "diabetic management," or "hope."

The participants related they would like to incorporate more case-study work within their classrooms and are considering some modifications within their courses to accomplish the inclusion of more formal case studies. Amy, Avery, and Ivy expressed interest in linking reflective-thinking exercises to some of their outside of the classroom case-study assignments.

Formal use of case studies, both within and outside the classroom, consisted of cases about specific patients that students would commonly find themselves exposed to in an acute-care hospital. All four of the educators believed that the studies needed to be realistic and pertinent to what the student nurses needed to know while caring for an

acutely ill patient. The patients used in the participants' case studies had complex health histories. The focus of the studies was on priority of nursing care to be applied. Ivy combined the two pedagogies of concept mapping and case studies by having her students create concept maps of the case studies presented in class. She had her students draw maps related to presented case studies on two occasions while I was observing her. These maps were formative activities. The next primary theme, which emerged from my data, related to case studies was that of informal implementation of case studies.

Informal Implementation of Case Studies

The informal use of case studies during lecture takes the form of sharing personal experiences or, as Ironside (2003) termed it, "narrative pedagogy." These personal experiences are actually mini-case studies that are impromptu. Each of the four participants responded that they use personal experiences liberally within their lectures to present specific concepts across to their students. Amy related that she uses "anecdotal notes" about personal experiences or experiences of other nurses, which are anonymously represented. She uses these experiences almost every lecture and often multiple times throughout her lecture.

Avery stated, "It just happens. I'm an oncology nurse and I have lots of stories." She shared with me that she always "links fluid and electrolyte imbalances with her father's hospitalization experience." Avery pointed out that she "paints a picture" of what her father's symptoms looked like to her, so that the students, when they see these symptoms, will link the physiological pathology with their assessments of patients with similar symptoms. Ivy stated that her years as a nurse have provided her with many

personal stories that she has incorporated into her lecture format. She further explained that it is not only the physiological aspects of her mini-cases that she includes in her stories but also “the emotional components of them as well.” Most of the personal experience sharing initially came about spontaneously; however, over time, each participant stated she now purposely includes the same cases within her lectures. As new experiences occur, they are added to the lectures in the same pattern. The educators also stated they often use old experiences, from their early days as a nurse, as examples of how far nursing has progressed. According to Yolonda, the sharing of real-life examples provides an example of how nursing care constantly is changing; she uses her old nursing stories to stress how important it is to stay current with academic nursing journals and evidence-based practice.

Ivy related, and as demonstrated by the other participants, you will not see the mini-cases of personal experiences within the PowerPoint® slides, but they are imbedded in every lecture. For instance Ivy used her experience as an intensive care nurse to describe the nursing care of a patient with intracranial pressure. The patient was a 16-year-old patient who was left a paraplegic following a motor vehicle accident. She was discussing the purpose of intracranial monitoring and related a specific incident regarding utilizing the monometer (measuring device) at the appropriate height. During all 12 of my site visits, each participant utilized informal case studies during class time. The cases were often brief and appeared to be recited extemporaneously or improvised.

Upon clarification with each participant, following my observation days, they related that perhaps initially their use might have come to them while they were

lecturing spontaneously; however their repetitive use each semester subsequently has continued. As Ivy stated it's "the real-life personal experiences that keeps them (students) interested during a three-hour lecture." According to the Amy, the students want to know about "real-life" nursing.

Summary of Pedagogy: Case Studies

In review, the pedagogy of case studies had the most presence within my participants' didactic courses. Case studies are provided to students by my participants either formally within the classroom or outside of it in the form of out-of-class assignments. Also, an informal or personal mini-case study is presented daily by my participants. A common statement, made by my participants, regarding the use of case study pedagogy is that this method brings nursing care into focus. Later in this chapter, this perceived purpose is expanded upon in response to research question two.

The key elements of the Information Processing Theory are noticeable within my participants utilization of the pedagogy case studies. The linking of previous schema is present when each instructor initially offers information about the case to be studied; the information has been designed so that students are familiar with the content. For instance when Ivy implements her final case study day, it is always at the end of the semester; therefore, all the content included in her cases is available to her students. Also, the point that each instructor utilizes power points to initially present content needed for the case study links new with old schema.

Within the Information Processing Theory, it is stated that for learning to be achieved at a higher cognitive level students cannot be overloaded with content.

Students were not overloaded cognitively by my participants. In fact because of the use of the case-study method, overloading was avoided.

Being active in the learning process is apparent since the students are the ones responding and working through the prioritizing of nursing interventions within the case study. Even though, the utilization of the pedagogy, case studies, by my participants did have a reflection component. The use of case studies versus reflective-thinking exercises differentiate itself by the fact that case studies were based on scientific rationales; rather than the emotional or art side of the nursing seen with reflective-thinking exercises as the prominent goal for their utilization. The next pedagogy discussed in relation to research question one is that of reflective-thinking exercises.

Reflective-thinking Exercises

Reflective-thinking exercises may have had relevance within the other two pedagogies; however, its primary pedagogical application of having the students think through their thinking, as stated in the operational definitions of my study, specifically are addressed. Related to research question one, two themes emerged for the pedagogy of reflective-thinking exercises. The first theme was that of sharing of reflections among fellow classmates; the second theme was that of sharing reflections with only the instructor.

Sharing of Reflection Among Fellow Classmates

When sharing reflection among fellow classmates either in the classroom setting or online via discussion boards, all four of the participants touched on the fact that the questions asked to stimulate the reflection needed to be higher level or open-ended

questions. Yolonda believes that reflection activities are best applied to situations where there are no right-or-wrong answer. Amy supported this idea when she stated that most of her reflective exercises, within the classroom, focus on having the students reflect on an ethical dilemma common to nurses. Ivy stated she purposefully uses questions that require the students to “mull-over” their answers. According to Ivy, she wants her students to “think for themselves for a while” during class instead of simply listening to the “talking head,” referring to herself. She will pose a question that has no specific right-or-wrong answer and then ask for silence. During the silence, each student thinks about the question and writes a short response. Students share their answers, and a discussion ensues. Yolonda follows a very similar format to that of Ivy.

During an observation of Yolonda’s class, the question she presented involved the allowance of family members in the hospital room while cardiovascular resuscitation efforts are being administered to a loved one. She allowed 10 minutes for the students to think about their answers in silence and then simply had them write down a yes or no response. A very lively discussion followed with personal experiences being reflected upon by Yolonda and several students. Approximately 20 to 25 minutes was devoted to the entire activity. Ultimately, the discussion ended with the facts that families had a right to be present and that medical personal needed to be accommodating.

One of Amy’s reflective exercises involved the use of the movie *The Constant Gardener*. The reflection is focused upon the ethical considerations within the protection of human subjects. The students were to have watched the movie outside of class so they were prepared to discuss the infringements of rights that took place in the

movie. I was able to observe this exercise on one of my observation days with Amy. She initially had the students break up into small groups of three students. They were assigned to discuss how confidentiality was broken and how the participants, within the movie, were treated unfairly. The small groups met for 20 minutes. A group spokesperson was identified, and group reports were shared with the class for the next 30 minutes.

An activity related to either cultural diversity or advanced directives for patients was the basis for one of Avery's reflective assignments that was shared with classmates. She incorporated a case study that dealt with either a cultural awareness issue or an issue with advance directives for a critically ill patient. During class time, she broke the students into small groups and had the students reflect upon their opinions of the cases. The small group work lasted about 20 minutes.

I was able to listen to one group's reflections during this activity. The dynamics of the group revealed that some members had strong opinions. Having no right-or-wrong answer, they simply were becoming aware and expressing their ideas regarding the cases. Avery had the groups come back together as one class, and a group representative summarized the group's opinions. The summaries were stated briefly, approximately 10 minutes for each group. No discussion followed this consensus of opinions reporting by each group; however, Avery cautioned her students that, as nurses, they must first be aware of their own opinions and feelings. This caution was a common theme among the four participants. They indicated that the best way to use reflective-thinking exercises was to have the students think about situations that were difficult because there was often no right-or-wrong answer. The second theme that

emerged, regarding implementation strategies of reflective-thinking exercises, is that of sharing reflections with the instructor only. This theme is presented in the next section.

Sharing of Reflections Exclusively With Instructor

Sharing of reflective-thinking exercises exclusively with the instructor was accomplished in the form of written journaling. Yolonda was the only participant who did not have her students carry out this form of reflection. Avery requires her students to do a monthly journal regarding what they each do to “take care of themselves.” In other words, are the students taking care of themselves so that they are not burning themselves out with their school load? Are they eating right and getting enough sleep?

She also asks them to journal how they felt when they experienced their first potentially upsetting or uplifting patient situation. For instance, she has them document their feelings concerning their first death, seizure, or birth of a child. This journal is electronic based and is submitted via Blackboard®. This journal was not a blog type of posting, it was only to be read by the instructor and the site on Blackboard® used was the Digital Drop Box.

Amy included a self-reflection component within her group work that she required throughout her course. She also required a group dynamics reflection that is, as she states, “for my eyes only.” The reflection on the group dynamics is supposed to focus specifically on how the group process progressed, and the self-reflection component is meant to focus on what each member believed he or she contributed to the group as a whole. These two reflection tools, she stated, help her identify those students who are truly participating within the group work.

Ivy incorporated an extensive amount of journaling that is in the form of written documentation. The reflection aspect of her students' journaling focuses on self-evaluation of course objective attainment. According to Ivy, this form of journaling is initially incorporated during the first semester in the nursing program. It begins with them documenting what they believe they can bring to the profession of nursing. Ivy stated that the instructors try and build upon the students' past experiences. They document what their strengths are and what led them to the nursing profession. The documentation practice ensures that, when students in the second semester of the program and are enrolled in Ivy's course, they already have used journaling.

Once the students are in Ivy's class, the reflective piece of the journaling deals with reflecting upon their care of patients that week and how they are meeting the course's objectives. She explains there are eight objectives for the course and are within the syllabus for her course. Each week, a student has to pick one of the objectives and explain how his or her patient care for that day demonstrates that he or she met that particular objective.

Summary Pedagogy: Reflective-thinking Exercises

Two themes were identified related to research question one. The first was that some reflections were shared and discussed as a group, either a small group or as a whole class. The second theme was that some reflections were private and meant to only be shared with the instructor of the course.

The use of reflective-thinking exercises had the least amount of representation during class time. The use of reflection, according to all four participants, was focused on thought-provoking issues. Issues that the participants wanted the student nurses to

beginning examining while they were in school, before they were experienced by them in the hospital environment. As previously stated, the use of reflective-thinking exercises was utilized within the classroom primarily as a philosophical process dealing with a controversial topic. The theme of sharing reflective thoughts with classmates was accomplished by open classroom participation or was accomplished via small individual groups. One educator utilized the theme of sharing with classmates by having them participate in a discussion board assignment utilizing the university's course management system Blackboard®. The second theme, utilizing reflective-thinking exercises with the instructor, was accomplished by a journal format. The reflections within the journal chronicled experiences encountered while caring for patients in the hospital setting and were only shared with the instructor. All of the reflective-thinking exercises initiated by my participants, while I was in the classroom observing, had a scenario associated with them; however, the focus was on reflection of the emotional aspect of the scenario not on the prioritizing of nursing interventions or interpretation of laboratory findings as was the scenarios associated with the case study pedagogy.

Summary Research Question One

Research question one was focused on the actual implementation strategies that were being implemented by my participants. The use of all three pedagogies did follow the key components of the Information Processing theory. For the pedagogy of concept mapping more focus was placed on the students generating maps. The participants in this study believed their students received the most benefit from the actual creation of

the maps. Often the maps were not graded and used primarily as a formative evaluation of learning.

The pedagogy of case studies had the most presences during my observations of my participants. During each of the 12 observational visits, a case study either formally or informally was implemented by my participants. Reflective-thinking exercises were implemented by my participants; however, significantly less time was devoted to their exclusive use within the classroom compared with the other two pedagogies. The use of some form of reflection, however, could be seen with both concept mapping and case studies. As stated in the operational definition of reflective-thinking exercises, within other pedagogies such as concept mapping and case-studies is common. The next section of this chapter contains the findings as they relate to my second research question.

Research Question 2

How do effective nurse educators perceive that these pedagogies are enhancing learning at a higher level of cognition?

The purpose to this research question dealt with the participants' reasoning behind the use of the three pedagogies. In other words, what do the nurse educators perceive is beneficial regarding the use of the pedagogies concept mapping, case studies, and reflective-thinking exercises?

To address this research question, the participants were asked, "How do you perceive that your students are responding to these three pedagogies?" They were also asked to explain what their understanding was of the purpose of the pedagogies. Last, they were questioned about the factors that influence their decisions to implement the

pedagogies of concept mapping, case studies, and reflective-thinking exercises. These questions were addressed during our initial interview and clarified as needed during our debriefing sessions following each observation.

Two themes emerged from the second research question. The first theme was that all four of the participants believed that the incorporation of the pedagogies-- concept mapping, case studies, and reflective-thinking exercises-- caused students to be *active* in the learning process. They expressed that if students were active in the processes, there was an enhanced level of learning.

The second theme was the fact that the three pedagogies *integrated* knowledge and application of course material with the practice of nursing more effectively than lecture in its traditional PowerPoint® format did.

Students Active in the Learning Process

Ivy had a term for instructors who adhere to a traditional lecture format in their didactic course and never vary their pedagogies. She called them, and herself at times, “the talking head.” She explained that she has been trying to be more of a guide to learning in the classroom rather than the person simply standing at the front of the room doing all the talking. Initially, when she started pulling away from the “talking head” format of lecture, the students rebelled and stated they were confused. She said she thought, “Okay, I have to have a portion of the talking head in class while at the same time have some student activity woven into the class.”

Avery related that she came to the realization that she needed to combine some “active student-centered” components with her traditional PowerPoint® lecture format when she started paying attention to the distinctive “glazed-eyes-look” that students

presented after an hour or so of class. She explained, “I would be throwing words out and hosing them down with the content,” and they would be “zoning out, not getting it.” Avery concurred with Ivy that you cannot eliminate completely the traditional lecture format because students have a certain comfort level with this tradition; however, both are quick to defend the addition of an active-learning environment.

All four participants stated that part of the problem is the length of class time involved in their courses. All of them have class times that are 3 hours long, once a week. To keep the students active in the learning process, they stated they combined a pedagogy (concept mapping, case studies, or reflective-thinking exercises) and lecture with traditional PowerPoint® presentations. Typically, for about 30 to 40 minutes, they lectured in the traditional format and would implement some type of active-learning pedagogy. Often the pedagogy would take the form of a group activity. Regularly, however, they would bring the students back as a group to conclude the class. According to Ivy, she uses the pedagogies of concept mapping, case studies, and other pedagogies to “bring the foundations of the course together.”

Amy and Yolonda both termed this active-learning-environment as an “interactive” classroom. Both believe the benefit of using the “interactive” pedagogies of concept mapping, case studies, and reflective-thinking exercises are that they are able to witness the stimulation of their students’ critical- and creative-thinking processes. Each participant offered recent literature to substantiate the use of the three pedagogies. They related that it is impossible to keep students engaged for 3 hours worth of lecture without some type of active-learning activity. Amy stated that, “I have great personal case studies or stories and I can keep them engaged for a period of time”;

however, even with stimulating information, “you lose them at some point because of the time thing.” All four participants stressed that the use of the active processes of concept mapping, case studies, and reflective-thinking exercises must be applicable to the students.

One comment made by Avery was that using active pedagogies, such as case studies, allows for “buy-in” by the students because it is not just rote memorization. She, along with the other participants, believes that having the students be engaged and active in the learning process with the three pedagogies allows the students not only to retain the knowledge more comprehensively but also to have greater application of that knowledge to the practice of nursing.

All of the participants associated active engagement of their students’ minds with enhanced learning. According to the Ivy, students focus on thinking and not taking notes from PowerPoint® slides. Yolonda shared that when the students are working on a case study “you can see the thinking taking place on their faces, rather than the top of their heads taking notes.” Ivy goes on to relate that initially students hate the active learning process, because it is more work for them; however, in the end, students thank her for having them participate in their implementation. Ivy shared a story about a student who came back and thanked Ivy for having her perform the concept-mapping assignments. Avery related that students come back to her months later and tell her things like, “remember that case study you told me about with the dehydrated patient and his laboratory values, well I had a patient just like that and I knew exactly what was going on with my patient because of that case.”

The use of the three pedagogies, as stated by my participants, enhances learning because the students are *actively* creating the links themselves; therefore, a pattern has been created for future learning. The second theme that emerged from my investigation related to my second research question is explained below.

Students are Integrating Course Material to the Practice of Nursing

When asked specifically what benefits each of the participants perceived that the students were gaining from the concept-mapping activities, all four educators had similar responses. Avery related that it was the “visual connections that the students make.” She stated that students’ responses are immediate. They relate to her when they prepare a map that it helps explain why something might be happening to their patient because they see the relationships visually rather than a linear written approach. Ivy and Yolonda described their students’ response to concept mapping as being effective because it allows them to break-down a complicated concept into smaller pieces, allowing easy analysis of it. After they have analyzed it, students can piece the concept back together by fitting the pieces into a visual format, making a complicated concept more “user friendly” according to Yolonda. She went on to explain that, when her students are creating a map in this fashion, they are reaching an intensity of learning she believes to be at a higher level of cognition. A level that the three participants who utilize mapping believed was at the synthesis level of Bloom’s taxonomy.

Ivy provided an experience that she had with one of her students. She stated she had one student who was opposed to the idea of creating a concept map for a care plan rather than a written one. She complained regularly about the amount of concept maps Ivy had her students do. About midway through the following semester when the

student was no longer in Ivy's class, the student came to Ivy's office and shared, what the student termed, an "epiphany." According to Ivy, the student stated she had a patient that week with multiple chronic disease processes. During the care of that patient, one of the staff nurses asked her a question about a specific assessment finding. The student stated she immediately visualized in her mind a map she had created for Ivy the semester before. Once she did that, she was able easily to answer the nurse's question about why that assessment finding was pertinent to the patient. The student stated she was able to "visually connect the dots of her concept map and the words just started flowing out of my mouth."

According to the participants, the students are asked to be active in the learning process when they use the three pedagogies. They have to "think" according to Yolanda. She believes that the use of case studies helps integrate the content within the didactic portion of nursing school and the clinical. Avery stated that it is the application of nursing in action. According to Avery, case studies allow the actual applying and then acting on nursing care, which she believes will enhance knowledge retention.

When the participants were asked how they view the pedagogy of reflective-thinking exercises as enhancing learning, the consensus statement was that reflection helps bring concepts to the forefront that are not necessarily straightforward. All four participants concurred that reflective-thinking exercises are key to the development of critical-thinking skills. Yolanda summarized it as looking at a concept from multiple viewpoints and realizing that nursing is influenced by many different sciences.

According to Amy, the use of reflective-thinking exercises "instills a method of inquiry or an attitude of inquiry" so that, if the students do not know something or if

something is happening with their patients, students will investigate. They want to know why this particular situation is happening to their patient.

Avery associated the use of the three pedagogies with the giving of the necessary tools for students to continue learning. Because it is impossible to teach them everything they need to know, providing them with the tools to mentally expand their knowledge on their own is the ultimate reason to use the three pedagogies.

Summary Research Question Two

In review of my second research question two themes emerged. The pedagogies concept mapping, cases studies, and reflective-thinking exercises were effective because they required the nursing students to be *active* in the learning processes. The second theme was that nursing students are able to *integrate* lecture content with nursing care in the hospital environment with greater ease.

Although physical activity was a component of the first theme, it was ultimately the activity of “thinking” that the participants in the study believed were beneficial. All four participants related that they saw the purpose of the pedagogies as improving critical thinking within their students. According to the participants, the ability to *integrate* nursing care into their clinical experience with superior ease was a sign of higher level cognition. The participants associated their decision to include learner-centered pedagogies with two reasons. The first was that it was the best utilization of the 3-hour class time; it kept the nursing students active both physically and mentally.

The second perceived reason to implement the pedagogies of concept mapping, case studies, and reflective-thinking exercises was that *integration* of course material and “real-life” nursing was achieved. The participants believed that authenticity of what

was learned during the didactic course was realized. According to the participants, this integrating of content was seen as one of the reasons students were able to succeed in the clinical setting. As Amy stated, “the sharing of my knowledge in methods that keeps them (nursing students) interested in self-directed learning is my ultimate focus.” It was shared with me that this motivation, to facilitate metacognition, was achieved by the pedagogies in my dissertation. Amy and my other participants expounded on the idea that the utilization of the pedagogies of concept mapping, case studies, and reflective-thinking exercises created a classroom atmosphere that was a “thinking environment.” Presented next are two pedagogies that also were implemented during my observations of Ivy and Amy.

Additional Findings

As data analysis unfolded into themes that were related to the two research questions, two other pertinent pedagogies were identified that warrant presenting. Both pedagogies were along the lines of case studies but have a slightly different twist to them. The first pedagogy was implemented by Ivy and is called “Talk of the Day.” The second pedagogy was utilized by Amy and is called “Quick-Fire Challenge.”

Talk of the Day

During one of my observation days with Ivy, I was able to watch her implement yet another teaching strategy. Within the students’ syllabus, the agenda for the day simply reads “Talk of the Day.” The topic scheduled to be covered that day was central nervous system conditions, specifically, cerebral vascular accidents, seizures, and head trauma. Ivy opened her class with a 45-minute traditional PowerPoint® presentation. She then shared three case studies of patients. With each case, she requested the students to

think through specific aspects of underlying pathophysiology, nursing assessments needs, planned interventions, and anticipatory care of this patient. While the students answered the questions and discussed each of the cases, Ivy was creating a concept map on the white board with colored dry-erase markers. She then gave the students a break.

Upon returning from the break, the students divided into small groups of three to four members each. Each group was assigned a scenario. The scenarios were situations that a nurse might commonly find herself involved with. For instance, one scenario was that the nurse, represented by one of the group members, was caring for a 16-year-old boy who had been involved in a motor vehicle accident and was most likely permanently neurologically impaired. The remaining group members were to portray the patient's mother, father, and sibling. Another scenario was that a nurse was caring for a 10-year-old girl with new onset seizures. Again, one member of the group was the nurse, and the other group members were the patient's family members.

The groups had 30 minutes to put together responses to family members' questions about their loved ones. Initially, all of the nurses had to explain the condition of the patient and then respond to any other potential questions the family members might have. The pretend family members were to coach the nurses by helping them practice potential questions and assisting them with appropriate responses. Once the groups were working on explanations to family members and the nurses were being coached on possible questions from family members, Ivy explained a catch she was incorporating into the scenarios.

The catch was that the nurse was not going to explain the condition of her patient to her group's "family members" but instead to another group's pretend family. Ivy

explained to me later that this impromptu aspect is unsettling at first. She finds that once they are reassured that they are not being graded and that other group members of the nurse can be used as resources, they become less anxious. The next step was for two groups to go to the front of the classroom together.

Of the first two groups, one group had the 16-year-old boy with head trauma; the second group had the 10-year-old girl with seizures. The first nurse explained the situation of her patient suffering from head trauma to the other group's family members. The family members were then allowed to make up questions for the nurse. The nurse could enlist the help of her group members as needed. After the cases played out, the audience and Ivy were allowed to ask the nurses additional questions.

During the debriefing with Ivy, following this observation day, she related to me that she implements this teaching strategy for two reasons. The first reason is that it requires the students to think through recent lecture content. They have to break down the key aspects of the content into manageable information (analyze) and then put it back together in a method that makes sense (synthesis). The second reason, according to Ivy, is that it makes the students practice speaking to family members and dealing with uncomfortable situations that have the potential to escalate if not handled appropriately. Ivy believes that these are areas of nursing practice that nursing school often overlooks. Ivy stated she typically does this activity with the neurological content because of its complexity.

Quick-fire Challenge

A similar teaching strategy is implemented by Amy and is called "Quick-fire Challenge." I was able to observe Amy implement this teaching strategy during my first

site visit. She had told me about it the night before during our initial interview.

Apparently, Amy is an avid “Top Chef” viewer. I had heard of the program but admitted to never having watched it on television. Amy explained that there is a “Quick-fire Challenge” during each episode. Within Amy’s syllabus, there is no mention of this activity. So it is a surprise to the students, and she does not grade them on the activity.

The topic for the lecture period was contraception and high-risk pregnancies. Amy opened class with approximately 50 minutes of lecture regarding high-risk pregnancies. Then she gave the students a break. Upon returning, she had the students separate into groups of three to four students. She proceeded to lecture on contraception. Both lectures were PowerPoint® based but included several personal experiences that were presented as if they were mini-case studies. Each mini-case study created discussion that lasted 10 to 15 minutes. Once she had completed the lecture on contraception, she randomly passed out small folded pieces of paper to each group.

Upon each of these papers was written a slogan from a commonly heard commercial on television. For instance, one was the Campbell’s Soup commercial “mm good.” Once the groups received their slogan, the groups were to create a commercial of their own using the slogan while promoting a form of contraception. She gave them 30 minutes to be creative and then each group performed the commercial.

The group that had “mm good” used the slogan to promote their brand of flavored condoms. This group led into the commercial with statistics about prevention of sexually transmitted diseases and the prevention of pregnancies, ending it by singing the flavors of the condoms: “Strawberry, orange ... and they’re mm good.” This activity, according to Amy, demonstrates creative and active involvement. It had the

same pedagogical benefit as Ivy's in that students were required to make sure they included key facts about the topic they chose for creating a commercial. The debriefing with Amy after this observation reflected the same reasons Ivy cited for implementing her teaching strategy "Talk of the Day."

Summary

Nurse educators who were teaching didactic courses in an undergraduate baccalaureate school of nursing were interviewed and observed in the anticipation of answering questions related to their use of three pedagogies: concept mapping, case studies, and reflective-thinking exercises. In addition to how they are implementing the pedagogies, my study attempted to shed light on the perceived reasoning of their use, as expressed by the participants. Data were collected by interviews, observations that included debriefing sessions, and course documents. Raw data were coded in the qualitative computer software NVivo 8. The software was used to organize the data into meaningful categories. Repetitive reading and note taking resulted in the emergence of identifiable themes.

For research question one, the pedagogy of concept mapping yielded two main themes. These themes were student-generated concept mapping and teacher-generated concept maps. The first theme, student-generated mapping, also resulted in two sub-themes: formative and summative student-generated concept mapping.

The pedagogy of case studies also yielded two themes. They were formal implementation of cases and informal use of case studies. The theme of formal implementation of case studies ultimately had two subthemes. They were the use of case studies within the classroom and case studies use outside of the classroom.

The last pedagogy investigated was that of reflective-thinking exercises. This pedagogy provided me with two themes. Theme one of reflective-thinking exercises uncovered that some reflective-thinking exercises were shared with classmates; the other theme was that some reflections were meant only for the instructor.

The investigation into research question two supported two themes. The two emergent themes related to research question two were students need to be active in the learning process and students are able to integrate course material to the practice of nursing with the use of the three pedagogies: concept mapping, case studies, and reflective-thinking exercises. The two additional findings were Ivy's use of the activity she called "Talk of the Day", and Amy's "Quick-fire Challenge." In the following chapter, I present my summary, a discussion of the results, limitations, recommendations, and conclusions.

CHAPTER V

SUMMARY, LIMITATIONS, DISCUSSION, RECOMMENDATIONS, AND CONCLUSIONS

Qualitative research seeks to acquire knowledge for “essential discovery” (Patton, 2002, p. 215). In order to discover how effective nurse educators were implementing the three pedagogies of concept mapping, case studies, and reflective-thinking exercises, the participant educators were studied in their innate surroundings. The instrumentation within this study strove to assist in the identification of a pattern that attempted to explain the specific implementation strategies the participants of this investigation were utilizing in relation to the stated pedagogies. An additional purpose of this investigation was to identify the underlying reason the nurse educators perceived the use of the three pedagogies were beneficial to the learning processes of their student nurses. Within this chapter, a summary of results is presented, limitations provided, and a discussion of the findings offered. Recommendations for practice are suggested, ideas for future research are explained, and a conclusion statement is provided. An afterword highlighting what I have learned while conducting this investigation is my closing comments.

Summary of the Results

The observable and shared details of how the nurse educators, within this investigation, were implementing the pedagogies of concept mapping, case studies, and reflective-thinking exercises were explored. There were a total of four participants. Two participants were from Northern California, one was from the Central Valley, and the fourth was from Southern California. Two of the schools of nursing were private, and two schools were public. Each of the participants currently was teaching didactic courses within an undergraduate baccalaureate school of nursing. I was able to examine the

syllabi and course assignments for each participant. Initial data collection consisted of one semistructured interview followed by three observational site visits. The observations were followed by debriefing sessions to clarify pedagogy use during the observation. The site visits for each participant occurred during a lecture class on three separate dates. All contacts with the participants took place during the Spring of 2009. A summary of results are presented as they related to each of my research questions.

Research Question 1

How are effective nurse educators implementing the pedagogies of concept mapping, case studies, and reflective-thinking exercises in undergraduate didactic courses?

In response to research question one, the participants in this investigation were implementing the three pedagogies in comparable methods. Minor alterations in format were identified, but the overall themes that emerged from research question one, were revealed to be uniform for all four of the participants. The emergent themes regarding research question one are found in Table 6 in chapter IV page 90.

The three participants who utilized concept mapping did so by employing them in two primary methods: that of student-generated concept mapping and that of teacher-generated maps. Student-generated concept mapping had subthemes that were formative and summative utilization of concept mapping. Concept mapping was used formatively to enhance higher-level thinking and as a summative evaluation tool. Also evident was the use of concept maps by the instructors during lecture, which was less evident than student-generated use. The pedagogy most widely and repetitively used

was case studies. The informal use of case studies was used multiple times throughout each lecture I observed.

Case studies were used daily by all four participants. During each of my site visits, at least one case study was presented by each participant. Two themes emerged regarding my participants use of case studies: formal and informal use of case studies. The formal use of case studies was further divided into use within the classroom and outside of the classroom.

The formal use of the pedagogy reflective-thinking exercises was the least evident in the daily lecture settings of my participants; however, reflection was woven to a certain extent into the other two pedagogies. Its formal implementation strategy was that of having students reflect upon personal feelings and thoughts about controversial issues. The implementation of utilizing reflective-thinking exercises for contentious issues was accomplished both by reflections in writing as an assignment and by communicating verbally within the classroom setting. The themes that emerged regarding the implementation of reflective-thinking exercises were shared reflection with fellow classmates and shared exclusively with the instructor.

Reflective-thinking exercises had a specific use for all the participants that being its use as a familiarity with issues in nursing that have no clear right or wrong answer. The perceived reasoning for the utilization of the three pedagogies was explored; a summary of the participants' explanations are reported within the next section of this chapter.

Research Question 2

How do effective nurse educators perceive that these pedagogies are enhancing learning at a higher level of cognition?

Research question two of my investigation pertained to what the nurse educators perceived the three pedagogies contributed to their student nurses' level of cognition. None of the participants had gathered objective data to substantiate their responses; however, all four participants were resolute that merely adhering to the traditional PowerPoint® lecture format for the didactic setting was an ineffective use of the students' time. Two themes emerged from the data collected regarding the reason the pedagogies of concept mapping, case studies, and reflective-thinking exercises enhanced higher level learning. The two themes were that the students are *active* in the learning process and that they are able to *integrate* the knowledge learned in lecture to that of the hospital environment with increased accuracy and speed.

This belief of enhanced learning by the participants is based on the perception that the students *actively* are able to practice their thinking in the classroom. According to my participants, their students' active analysis and synthesis of the information being presented during the lecture is important to higher cognition. The educators in my investigation equate this practice with enhancing critical thinking. The four participants demonstrated a focused effort on ensuring that it was the student who put the pieces of knowledge together rather than the instructor. It was related that it was these *active* processes in the didactic setting that allowed the *integration* of lecture content to the practice of nursing. While observing lectures for Ivy and Amy, two additional pedagogies were utilized and are summarized under additional findings.

Additional Findings

Two additional pedagogies were identified during my site visits. Both of them were associated, according to the participants, with case study pedagogy. The first additional learning strategy was implemented by Ivy and was called “The Talk of the Day.” During this activity, Ivy presented the students with a case study that they in-turn had to familiarize themselves with and present to a pretend family. The purpose of the activity, according to Ivy, was to have the student nurses “wrap their heads around” a complex disease process and then have to explain it to the pretend family member. This was an example of how the use of case studies, integrated course material with nursing’s role in the acute-care hospital.

Ivy related that her pedagogy of “The Talk of the Day” had two purposes. First, it allowed the students to think through the information explained to them by Ivy. Second, it forced them to then put the information into their own words. The requirement of the student nurses to both analyze the content just presented to them and then to synthesize it while Ivy was present enhanced the level of cognition achieved by the nursing students.

Amy implemented a similar activity, which she called “Quick Fire Challenge.” After presenting content regarding contraception, she then asked the students to utilize a familiar commercial slogan and create a factual public service announcement. Amy believed this learning activity was an example of having the students “apply, right then and there” what they have just learned and discussed. Presented next are the limitations to my investigation.

Limitations

Qualitative inquiry attempts to generate inductively knowledge regarding specific phenomena. The real world, rather than the laboratory, is the setting for this type of research (Creswell 2007; Patton, 2002). Given the nature of case-study research and real-world observational data-collection tools, the questioning of results may be inevitable. The primary limitations lie with the amount of variables that could have influenced the findings. One variable that could have influenced the results of my study is an inaccurate reporting of pedagogies by each participant during the interview process. Another potential limitation is that during the scheduled observation day, any participant could have inflated or exaggerated her performance during the lecture. After spending time with each participant, however, I find it difficult that either of these limitations came to fruition.

Another factor that may have affected the results is that of researcher bias. Although I did spend time with each participant, I believe that I was not swayed by them to report inaccurate findings. An additional limitation is the fact that, as a qualitative investigator, I am inexperienced. I believe that this limitation did hinder my speediness in completing my research, but it was not detrimental to the accuracy of the results. Another limitation is the inability to generalize my findings to other nurse educators who might be implementing these same pedagogies. The small sample size (n=4) is one of the primary reasons for this.

The purpose of this dissertation is to enlighten other nurse educators on the specific techniques practiced by successful nurse educators while implementing the three pedagogies within a didactic nursing course. Findings are reported as accurately and as

objectively as is possible. A presentation of how each participant facilitates the use of the three pedagogies was the ultimate intended outcome of my study. In addition, the reasoning behind the participants' utilization of the methods was sought.

Discussion

The need for nurses to exhibit a higher standard of clinical competence is a direct result of increased technology, new treatment regimes, and complex co-morbidity disease processes of patients. Contributory disease processes and advanced technology in the acute-care setting has sounded an alarm among nurse leaders with respect to nursing education. This complexity of the hospital setting has caused nursing leaders to look at the need to improve the preparation practices of student nurses (American Association of Colleges of Nurses (AACN), 1998, 2009; Board of Registered Nurses, 1999).

Nurses need more now than ever to be critical thinkers within their practice. Therefore, the need to prepare adequately student nurses has come under scrutiny. It has been stipulated that exposure in nursing school to the practice of analyzing, synthesizing, evaluating, and then responding quickly to patients' needs should be a priority of nurse educators (AACN, 1998, 2009; Board of Registered Nurses, 1999). In order to adequately prepare nursing students, it has been suggested that nurse educators need to incorporate pedagogies that enhance the learning process for student nurses (AACN, 1998, 2009; Del Bueno, 2005; Ironside, 2004). Pedagogies believed to enhance learning at a higher cognitive level are learner centered rather than teacher orientated. Thus, pedagogies designed to enhance student nurses' levels of thinking are those teaching methods that engage student nurses in the learning process. To engage student nurses in this higher-level learning process, an instructor must utilize learner centered pedagogies such as

concept mapping, case studies, and reflective-thinking exercises (Allen et al., 2004; Daley, 1999; Del Bueno, 2005; Ironside, 2004; Scheffer & Rubenfeld, 2000; Staib, 2003; Valiga, 2003; Walsh & Seldomridge, 2006).

The logical first step was to examine effective nurse educators in action. The explanation of how the participants within this study use the three pedagogies of concept mapping, case studies, and reflective-thinking exercises will act as a conduit for other nurse educators attempting to implement pedagogies that are learner centered. The themes that developed from my investigation did indeed shed light on the actual implementation strategies used for the three pedagogies. The finding that the pedagogy of concept mapping was primarily utilized as a student-generated activity was enlightening. The fact that Daley's (1999) format for student-generated concept mapping was used by all three participants was informational.

Learning that case studies were implemented each day informally via narrative pedagogy by each of the participants was instructive. The informal implementation of case studies was comparable with the narrative pedagogy described by Ironside (2003). Each of the participants was aware of the research supporting the use of these informal cases studies, which are analogues to personal experiences of the educators. They were conscious of the findings that the content presented in the informal cases was the content students sited as remembering most from their coursework (Diekelmann, 2001; Ironside, 2003; Van Eerden, 2002). As Ivy stated, "Students remember my stories (cases) best because that is what really happens in nursing." A greater percentage of time was devoted, during lecture, to case-study work compared with the other two

pedagogies, which was true for all four of my participants. The final pedagogy examined during this investigation was that of reflective-thinking exercises.

The detail that reflective-thinking exercises were shared both with other students and exclusively with faculty was established. The use of reflective-thinking exercise philosophically also was pertinent. Nursing has been called a profession that has both an art and a science facet within its role. It is possible that the use of concept mapping and case studies are designed specifically to enhance the scientific characteristic of the nursing role and that reflective-thinking exercises are best used to incorporate the art of nursing into the practice of a registered nurse. Although my investigative results do not address that specific thought, it would be an interesting idea to pursue in future research. Regarding reflective-thinking exercises, even though the formal use of them was less than the other two pedagogies, the weaving of a reflection component was evident in both concept mapping and case studies.

When the results and conceptual framework of this investigation were compared with each other synchronization was noted; thus key components of the Information Processing Theory were visible. The first three components of the Information Processing Theory, previous schema, organized, and appropriate level, were apparent during my observations. The fourth component of the Information Processing Theory was that cognitive overload should be avoided. To accomplish this, one the three pedagogies was implemented by my participants during each of their 3-hour class meetings I observed. A fifth and sixth component of the Information Processing Theory that stood out in my results was the fact that students' activity level during the learning process was important to the participants. The greater the activity level of the students, the more learning

potential (Ormrod, 2003; Shimamura, 2000). All four participants emphasized their beliefs that simply lecturing, or as Ivy called it being the “talking head,” was not compatible with a higher level of cognition. According to my findings, each participant believed that the need to have students actively engaged during class was fundamental for classroom theory to be integrated within student nurses’ clinical practice. A summary of the Information Processing Theory and comments that support the development of themes as they relate to them are presented in Table 7.

Table 7
Information Processing Theory Related to Participants Comments

Information Processing Theory	Participants Comments
Previous Schema	<p>“I build upon previous content to explain the new”</p> <p>“I always try and orientate the students to the underlying pathophysiology”</p>
Organized Delivery	<p>“The students have to be familiar with the material first before I have them map the content”</p>
Appropriate Level	<p>“The cases I give my students are based on content they should know and if they do not know the content they now know they should”</p>
Amount of New Material	<p>“I’ll lecture for 30 to 40 minutes then implement an active-learning activity, otherwise I become just a <i>talking-head</i>”</p> <p>“You have to be careful with straight lecture time... they (students) will zone out, not get it”</p>
Active/Learner Constructed	<p>“my classes are interactive”</p> <p>“engage them with active learning”</p> <p>“students think instead of just listen”</p> <p>“stimulate their critical thinking”</p> <p>“practice thinking their thinking”</p> <p>“(concept mapping) visually connects content to care”</p> <p>“(case studies) makes care come alive”</p> <p>“(reflective-thinking exercises) come to their (students) own realizations”</p>

According to the participants within this investigation, it is the transfer of responsibility for learning from teacher to learner that is evident when the three pedagogies are implemented. The transfer of responsibility is what encourages and enhances life-long learning for nursing students, thus allowing them to function adequately in the complex healthcare setting upon graduation. The reasons cited for this successful transfer, is student nurses learn to analyze systematically complex situations in a safe environment (classroom) and are able integrate the knowledge into their future practice as nurses with greater ease, which relates to the concepts of metacognition and critical thinking.

After interviewing and observing the four nursing instructors, I realized, although traditional lecture format of PowerPoint ® presentations with the educator predominately leading the discussion is still the mainstay of their didactic pedagogical practices, that the use of learner-centered pedagogies have an important presence. These educators who are progressive in their thoughts about creating an environment that is learner centered are at the forefront of nursing education. As stated by Ivy, it is very easy to just “go with the status quo” and not modify your teaching methods; however, as research has shown, the status quo is no longer possible (Benner & Sutphen, 2007; Del Bueno, 2005).

Literature has reported on the need for change in teaching practices and has stated pedagogies such as concept mapping, case studies, and reflective-thinking exercises are viable alternatives; however, actual methods of implementing those pedagogies appeared to be lacking in literature (Allen, Rubenfeld, & Scheffer, 2004; Del Bueno, 2005; Ironside, 2004; Scheffer & Rubenfeld, 2000; Valiga, 2003; Walsh & Seldomridge, 2006).

Within the next section, taking into consideration the belief that the next step is to share how these pedagogies are being implemented, I offer recommendations for practice.

Recommendations for Practice

Within this section, recommendations are made to nurse educators currently teaching didactic courses in schools of nursing. The recommendations are separated into three progressive stages. Stage one represents a literature review and observation of an instructor who is implementing one of the pedagogies, stage two an attempt to implement a pedagogy within their didactic course, and three a suggestion to create a team approach to the implementation of the pedagogies among faculty members at their school of nursing.

The recommendation in stage one encourages nurse educators to instigate self-directed literature reviews and then attempt to observe an instructor who is implementing one of the pedagogies. The literature reviews should focus on the improvement of student nurses' cognition. It would be beneficial for the literature reviews to be expanded to include journals from outside of the nursing profession, such as the journal entitled "Teaching Psychology". Nurse educators are at a disadvantage within the educational environment; they have less formal education regarding learning theories. The self-imposed investigation is seen as the first step to equalize this disadvantage of nurse educators (Del Bueno, 2005).

The stage one recommendation of performing literature reviews and an observation serves two purposes. The first purpose is that the review acquaints nurse educators with pedagogies being implemented within schools of nursing that are believed to enhance learning at a higher level. It also will enlighten those educators who

acknowledge that their own postbaccalaureate education was lacking in *how to enhance learning*. Observing an instructor actually implementing one of the pedagogies would motivate and clarify how actually to employ the pedagogy.

Findings within my review of literature suggest that without the familiarity with learner-centered pedagogies nurse educators are unlikely to be aware of the need to make alterations in their teaching methods (Del Bueno, 2005; Scheffer & Rubenfeld, 2000). Therefore, I have suggested articles to be reviewed. The first literature that I would direct nurse educators to review would be the 2009 position statement by American Association of Colleges of Nursing (AACN). The statement made by the AACN encourages a reform in nurse preparation practices. Suggested are changes in pedagogies from traditional lecture formats to those that lead to increased critical thinking in student nurses. Pedagogies such as concept mapping and case studies are mentioned specifically (AACN, 2009).

The next article I would suggest for review, by the busy nurse educator, would be the article written by Staib (2003). I believe this article would be an appropriate preliminary resource. Within her 2003 investigation, Staib offered insight into pedagogies currently being implemented to enhance critical thinking in student nurses. All three pedagogies that I have examined within my dissertation are included in her investigation.

Even though Daley (1999) might be considered an outdated resource, I would still recommend the review of this article. It has been cited as the sentinel investigation into the application of concept mapping within nursing education (Kern et al., 2006; Staib, 2003). Therefore, I would suggest its inclusion in the first round of literature review by nurse educators. Literature specific to the pedagogy of case studies would best be

represented by Allen, Rubenfeld, and Scheffer (2004), Ironside (2003), and Van Eerden's (2002). I believe these three investigations offer implementation examples of both the formal and the informal use of case studies. The pedagogy of reflective-thinking exercises is best represented in the article by Bell et al. (2002). This article offers specific implementation strategies associated with the definition of critical-thinking enhancement.

The review of the above listed literature would be my initial or *read now* choices. Following this initial exposure to literature that supports a pedagogical reform in nursing education, I would suggest nurse educators to step out of the literature specific to nursing education. The support for implementing learner-centered pedagogies, such as concept mapping, case studies, and reflective-thinking exercises has a broader base; for example, teacher preparation journals or journals within the psychology of learning field of study are a good resource. Articles by Shimamura (2000) and Halpern and Nummedal (2006) would be supportive.

The investigations completed by the Carnegie Foundation that studied nursing and other professions' teaching methods should be supplemental readings. The suggested reading into the Carnegie research would be in the form of a book entitled *Educating Nurses: A Call for Radical Transformation*, authored by Patricia Benner, Molly Sutphen, Victoria Leonard, and Lisa Day. It was available for purchase in mid-December 2009. Although I have not had access to this publication, excerpts and preliminary findings have been available on the Carnegie Foundation's website and has been found to be informative.

In addition, a basic understanding of the two guiding frameworks for my dissertation would be excellent choices to help nurse educators grasp the art and science

of learning. The exposure to Ausubel (1963) and Marzano et al. (1988) would provide a solid foundation of how students learn. After completing stage one of my recommendations to nurse educators, stage two would be able to be accomplished.

Stage two of my progressive recommendations to nurse educators involves taking the initiative to implement a pedagogy that they identify with. I am not suggesting a major overhaul of an educator's pedagogical implementation style; however, baby steps should be initiated. In other words, one small change should be introduced and evaluated. According to all four of my participants, each of their pedagogies is a work in progress, and they regularly review literature for additional ideas for implementation strategies to improve their students' level of cognition and ultimately their practice as a nurse.

The third suggestion for nurse educators is to encourage their respective schools of nursing to take a unified approach to the implementation of one or all three of the pedagogies. This suggestion is supported by Ivy who stated her school of nursing is uniformly supportive of all three pedagogies. According to Ivy, the use of all three pedagogies begins within the first semester of the nursing program and continues throughout. One technique would be to integrate a sharing of pedagogies activity during faculty council meetings. Each month a faculty member would share his or her insight and experience regarding the implementation of a learner-centered pedagogy; thus, encouraging a team approach to nursing education revision within their school of nursing. Suggestions and experiences would be collected and a network of support could be established. In summary, my first suggestion for nurse educators is that they initially review literature both within and outside the profession of nursing. It was also suggested

that within this phase an observation of an instructor implementing one of the pedagogies would be beneficial.

My next recommendation is that nurse educators should implement a learner-centered pedagogy within their own courses, such as concept mapping, case studies, or reflective-thinking exercises. It is stipulated that small incremental changes may be the most effective for nurse educators when it comes to making changes within their course presentations. The last recommendation to nurse educators is to encourage a team approach among the nursing faculty in their schools of nursing by sharing of implementation strategies at faculty council meetings each month. The encouragement of nurse educators to perform investigative research, into the implementation of learner-centered pedagogies, is provided in the next section of this chapter.

Recommendations for Future Research

Future research should be focus on the investigation of whether these pedagogies truly enhance higher level learning of student nurses or not; if so, is it significant? In other words, do the pedagogies of concept mapping, case studies, and reflective-thinking exercises actually demonstrate improved learning (at a higher level) than traditional lecture format with PowerPoint® presentation? Within my study, I related that, although my participants *perceived* the use of the pedagogies concept mapping, case studies, and reflective-thinking exercises enhanced learning at a higher level, no evidence was offered to support their declaration.

The ability to make declarative statements regarding the sustained improvement in thinking when the three pedagogies are implemented has not been proven within my dissertation and is the next recommended area of research. To perform this type of

inquiry both qualitative and quantitative investigations would need to be initiated by nurse educators and researchers.

Another focus, for future research, could spotlight the combining of the three pedagogies. For instance the consideration that perhaps reflective-thinking exercises were incorporated into the other two pedagogies is an interesting possibility. Therefore, an investigation into how reflective-thinking exercises are incorporated into the active learning aspect of the other two pedagogies could be further developed.

Ivy's method of presenting formal case studies to her students and then having them work on a concept map of that case incorporates two methods of learner centered pedagogies; does the implementation of two pedagogies enhance a learner-centered classroom environment? Formative and summative use of the three pedagogies was evident within my investigation. All three pedagogies used one form or another of these two evaluation methods. So a question arises, would the use of only formative evaluations of student's progress still improve learning at a higher level of cognition? Would students be motivated enough to learn without grades attached?

The last suggestion for future research would be to investigate the use of concept mapping, case studies and reflective-thinking exercises from the student nurses' perspective, that is what do the students perceive as a benefit for the use of the three pedagogies. Do student nurses believe that the pedagogies improve their ability to integrate what is learned in the classroom to their clinical rotations with increase ease? My investigation focused on the instructors perspective. The student's perspective and the documentation that higher levels of cognition actually are achieved via the use of

these three pedagogies could be further explored by evaluating outcomes of student learning within the clinical setting.

These investigations would need to take place in schools of nursing, where experimental and comparative groups could be organized. If nurse educators are unable to perform large scale inquiries into the relationship between the three pedagogies and cognition enhancement, smaller scale investigational studies are excellent bridges to shedding light on their relationship.

Conclusion

The purpose of my investigation was to examine the teaching pedagogies of effective nurse educators who were identified as currently implementing progressive teaching methodologies. It was intended to explain the specific implementation strategies of three pedagogies: concept mapping, case studies, and reflective-thinking exercises. Another purpose was to explain how the nurse educators knew that these strategies were enhancing learning at a higher level of cognition. The findings within this dissertation relate that, although the three pedagogies under investigation were utilized, the traditional lecture format was still in evidence in the participants' everyday classroom. According to the participants, the use of the three pedagogies was not meant to replace completely the PowerPoint ® method of presentation of course content but to compliment its use with learner-centered pedagogies.

Each participant implemented a learner-centered pedagogy for two reasons. The participants believed that learning was enhanced if student nurses were active in the learning process. Being active in the process was more than just being physically active; mental activity was seen as the greater necessity. The second reason that the three

pedagogies were implemented, by my participants, was the belief that the integration of knowledge into the clinical setting was superior. The revelations shared by my participants, however, are not substantiated by investigative research. In other words, no investigational evidence was provided by my participants to collaborate their beliefs. The fact that all four participants believed similarly, however, was enlightening.

My dissertation attempted to explain how the participants were utilizing the three pedagogies. The actual implementation or *how* aspect was pertinent to my research. Research has demonstrated that nurse educators need to incorporate strategies that improve their students' higher level thinking ability, thus preparing them for the complex practice as registered nurses. Otherwise, without this ability, future nurses might have difficulty demonstrating competency in the 21st-century healthcare environment (Del Bueno, 2005; Ironside, 2004; Valiga, 2003; Walsh & Seldomridge, 2006).

The need to improve student nurses' higher level of thinking ability has led to examination of pedagogies being used in schools of nursing. It is believed that with the implementation of learner-centered pedagogies, such as concept mapping, case studies, and reflective-thinking exercises by nurse educators, higher levels of thinking will be enhanced (Allen, Rubenfeld, & Scheffer, 2004; Del Bueno, 2005; Ironside, 2004; Scheffer & Rubenfeld, 2000; Valiga, 2003; Walsh & Seldomridge, 2006).

Afterword

Upon completion of my dissertation, I have reflected upon what I have learned from its process. Within this section, I am providing that reflection. Thinking back, I am pleased that I selected a topic in which I was interested. As a nurse educator, my desire to improve my teaching skills no doubt instigated my interest. Repeatedly during my

doctoral course work, I was advised to make certain that the topic of my dissertation was one I really wanted to learn about; advice I am glad that I heeded.

Initially the purpose of my study was difficult to narrow down; however, after receiving advice from my committee the focus became clearer. The recommendations made, during my proposal defense, were instructive. The advice I received to make sure every question I asked during the investigative aspect of my research was focused on my research questions was taken to heart. I was told to print-out my research questions and put them where I could remind myself of their purpose. I did, and it worked. The actual interviews and observations proceeded well. I did learn you should not perform an interview in a noisy restaurant, as I did with Amy's interview. I had to transcribe that interview myself because the transcriptionist could not differentiate the voices. After completing my initial interviews, I realized my interview questions were not very specific to answering my research questions. My observations were the most enjoyable aspect of conducting my investigation; being on different campuses and conversing with participants was rewarding.

The use of NVivo8 software was both a curse and a godsend. Initially, I loathed it; I was confused between the whole file versus node concept and the idea that tree nodes were my actual themes. The confusing aspect of the program started to vanish when the ease of coding via a computer was realized. I believe the unfamiliarity with the program was frustrating, but subsequently it really did make the data come together. Not having to *literally* cut and paste was a good thing. The actual analyzing of my data was exciting for me. Learning the actual implementation strategies that Amy, Avery, Ivy, and Yolonda

used was the most exiting part of the whole process. Already, I have implemented some of their strategies into my own medical-surgical course.

In summary, I have learned that narrowing my research questions is important. In fact, the more focused the investigation is the less confusing it is to a novice researcher. I have learned that the actual data-collection aspect of a dissertation is the most enjoyable and that writing is not my best attribute. I also have learned I would most likely utilize NVivo8 again, having gotten over the initial confusion it brought. I believe, however, the aspect I have most learned from completing this study is the importance of how the chapters link together to create a flow of thought. Although I would not want to undertake another dissertation anytime soon (or ever for that matter), the processes of completing this investigation *has motivated* me to team-up with a more experienced researcher to perform research in the future.

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Appendix A

Letter to Nursing Program Directors Requesting Referrals of Nurse Educators

To: Department of Nursing Director
From: Danette Dutra MSN, MA, FNP
Re: Referral of potential research participants
Date: January 2009

Dear :

I am a doctoral student at the University of San Francisco and am currently working on my dissertation. *I am writing to you in hopes of soliciting potential research participants.*

The purpose of my study is to examine the teaching pedagogies of effective nurse educators who have been identified as currently implementing three specific progressive teaching methodologies. *The specific methods are concept mapping, case studies, and reflective-thinking exercises.* These three pedagogies, of effective nurse educators, will be conceptualized via the Information Processing Theory and the Dimension of Thinking Framework. Utilizing both descriptive and qualitative research methodologies, my study will investigate and then report on the current teaching pedagogies occurring in a select number of California baccalaureate schools of nursing. I am limiting my participants to those instructors who are teaching an undergraduate didactic nursing course and are currently utilizing the three pedagogies of concept mapping, case studies, and reflective-thinking exercises.

This study utilizes a qualitative research design that will gather data by utilizing an observational multisite case-study approach. Selection of participants will be purposeful in that they have been identified as educators who are implementing pedagogies that foster meaningful learning at a higher level of cognition. Data will be collected from each participant through observations, interviews, and pertinent documents. All information gathering sessions would take place at the instructor's convenience and would not take them away from their other responsibilities.

If you believe that such an instructor is currently teaching in your school of nursing, my request to you is that you provide me with his or her name and electronic mail contact information. I will then make contact with him or her, via electronic mail, asking if he or she would possibly be willing to participate in my research study. In the electronic letter, I would provide a more detailed outline of the participant's involvement. I also would ask that you share this letter with the potential participant. It is my premise that to assist in the optimization of nursing education, the logical first step is to examine successful nurse educators in action. I would appreciate any assistance that you might be able to provide.

Thank you for your time and consideration,

Danette Dutra

Danette Dutra MSN, MA, FNP

Appendix B

Letter to Potential Participates Explanation of Research and Responsibilities

Request to Participant

To: Potential Participants
From: Danette Dutra MSN, MA, FNP
Re: Request of your participation in research study
Date: February 2009

Dear _____,

I am a doctoral student at the University of San Francisco and am currently working on my dissertation. *I am writing to you in hopes that you will agree to participate in a research study.*

The purpose of this study is to examine the teaching pedagogies of effective nurse educators who have been identified as currently implementing three specific progressive teaching methodologies. *The specific methods are concept mapping, case studies, and reflective-thinking exercises.* **If you have received this letter, it is because you have been referred to me by a nurse leader who has recognized your pedagogical effectiveness.** This study utilizes a qualitative research design that will gather data by utilizing an observational multisite case-study approach. Data will be collected from each participant through observations, interviews, and pertinent documents. The interviews and observations would be scheduled at the convenience of the participant. Observations would need to take place on days that one of the three specific methods (concept mapping, case studies, and reflective-thinking exercises) would be employed during class.

Outline of the participant's involvement:

1. Demographic survey and a teaching questionnaire, these tools are screening tools for inclusion into the study (time involved: 20 minutes) – submitted electronically.
2. Interviews (at least three: approximately one hour each) – audio recorded.
3. Observations of teaching a didactic class (at least three) – audio recorded. Possible video taping of interactions with class while teaching. No student will appear in video recordings. Video taping would be used for postobservation debriefing session clarification with researcher. Observations would need to take place on days that at least one of the three methods (concept mapping, case studies, or reflective-thinking exercises) were utilized.
4. Provide investigator with course syllabus and other pertinent documents.
5. A token of appreciation in the form of a \$150.00 gift certificate, will be provided to all participants during the data gathering section of the study. It will be hand-delivered to participant during initial interview.

To ensure anonymity and confidentiality the participants will be identified with both pseudonym names for themselves and the school of nursing that they are associated with. Transcription will be performed using the pseudonym identifications. All gathered data will be maintained either digitally on the investigators computer that is password protected or in a locked file cabinet that only this investigator has access to. This dissertation proposal has met with the University of San Francisco's Institutional Review Board for the Protection of Human Subjects (IRBPHS), which may be contacted at (415) 422-6091 or IRBPHS@usfca.edu.

I would greatly appreciate the opportunity to speak to you personally and clear up any concerns that you might have regarding participating in this study. If you would kindly email me of your possible interest I will contact you, by phone, at a time that is convenient to you.

I look forward to your response. Thank you for your time and consideration,
Danette Dutra
Danette Dutra MSN, MA, FNP

Appendix C
Demographic Information

Demographic Questionnaire

Are you:

- Male Female

Age: 35 years old or younger 36-45 years old 46-55 years old

- 56-65 years old 66 years old or older

How many years have you been a nurse:

- Less than 5 years 5-10 years 11-15 years

- 16-20 years 20-25 years More than 26 years

Highest level of educational preparation:

- MSN EdD PhD DnP

Years of teaching experience:

- Less than 5 years 5-10 years 11-15 years

- 16-20 years 20-25 years More than 26 years

Years of teaching at this institution:

- Less than 5 years 5-10 years 11-15 years

- 16-20 years 20-25 years More than 26 years

Current teaching position:

- Term position Tenure-track Tenured

- Adjunct Faculty Emeritus

Type of Didactic course currently taught:

- Medical-Surgical Obstetrics Pediatrics

- Psychology Community Critical Care

- Physical Assessment Pharmacology _____

Years teaching the current course:

- Less than 1 year 1-2 years more than 2 years

Currently teaching a clinical course:

- Yes No

Appendix D
Letter of Consent

University of San Francisco

Consent to be a Research Subject

Purpose and Background

As a graduate student in the School of Education at the University of San Francisco, I am conducting a qualitative research study on undergraduate didactic nursing educators who are implementing effective pedagogies. I am studying those nurse educators who have been identified as successfully implementing effective pedagogies in their undergraduate didactic nursing course. The effective pedagogies have been identified as concept mapping, case studies, and reflective-thinking exercises.

You have been asked to participate in this study because you have been identified as an educator who has successfully implemented these teaching methodologies into your nursing course.

Procedures

If you agree to be a participant in this study, the following will take place:

1. You will provide the researcher with pertinent course documents including but not limited to course syllabus.
2. You will agree to meet with the researcher for interviews (at least 3) to discuss your current teaching pedagogies. You agree to have the interviews tape recorded. The interviews will take place at your convenience. Tape recordings will be erased after they have been transcribed.
3. You agree to allow the researcher to observe at least three lectures. The lectures observed will include the use of at least one of the three pedagogies (concept mapping, case studies, or reflective-thinking exercises). You agree to have the lecture audio recorded and possible brief video recordings of your interactions during lecture. No student will be video recorded. Postobservation debriefing sessions with the researcher will take place following observations. The video recordings will be destroyed following the debriefing sessions.
4. You understand that you will be offered the opportunity to review the analysis of my interviews and observations for accuracy of interpretation.
5. You understand that at anytime you may elect to withdrawal from the study.
6. You understand that at anytime you have the right to not answer a specific question.
7. You understand pseudonyms will be utilized for both your name and the school of nursing.

Risks and/or Discomforts

Complete confidentiality will be maintained at all times. Your true identity will only be known to the researcher. All identifying characteristics will be eliminated from the presentation of results. Transcription will be performed using the pseudonym identification. All gathered data will be maintained either digitally on the investigators computer that is password protected or in a locked file cabinet that only this investigator has access to. Time constraints are of significant importance and may present risk of discomfort.

Benefits

The only *nominal* benefit for your participation in this study is in the form of a token gift certificate for \$150.00. The gift certificate will be given to all participates, even if you choose to not complete all aspects of the study. The anticipated reward for taking part in this study is the knowledge that your contribution may enhance another nurse educators’ understanding of how effective pedagogies, that enhance learning at a higher cognitive level of learning, are implemented.

Financial Considerations

There will be no financial costs to you as a result of taking part in this study. You will receive a small monetary reimbursement for participating in this study in the form of a \$150.00 gift certificate.

Consent

You understand that at anytime during the course of this study if you have any questions or concerns you may contact Danette Dutra or by e-mail.

If you are not comfortable discussing your concerns with Danette Dutra you have the ability to contact the IRBPHS office. This office is charged with the protection of volunteers in research projects. I may reach the IRBPHS office by calling 415-422-6091 and leaving a voicemail, by e-mailing IRBPHS@usfca.edu, or by writing to the IRBPHS, Counseling Psychology Department, School of Education, University of San Francisco, 2130 Fulton St. San Francisco, CA 94117-1080.

You have had an initial contact with Danette Dutra and have been provided with a copy of the “Research Subject’s Bill of Rights,” and you have been given a copy of this consent form to keep.

PARTICIPATION IN RESEARCH IS VOLUNTARY. You are free to decline to be in this study or to withdraw from it at any point. Your decision as to whether or not to participate in this study will have no influence on my present or future status as an employee in the program of nursing where your currently work.

Your signature below indicates that you agree to participate in this study.

Participant’s Signature Date of Signature

Signature of Person Obtaining Consent Date of Signature

Appendix E

Interview Question Protocol

Interview Protocol

Interview session

Initial interview: Semistructured

1. How do you prepare for class?
2. Describe your teaching style?
3. How does a typical class meeting progress?
4. What strategies do you use to teach a class?
 - a. What factors influence your decision on the choice of teaching/evaluating methodologies you use within your course?
 - b. What is your understanding of the purpose of the teaching strategies you employ during your lecture course?
 - c. How do you perceive that your students are responding to the different methodologies you incorporate in class?
5. How do you incorporate your personal nursing practice into your class?
 - a. Can you give me an example of an experience that you have used in the past?
 - b. How often would you say you use these personal experiences?
6. Describe your questioning techniques during class?
 - a. Can you give me an example of one?
7. Do you have any future plans to make any changes within your course?
8. Do you have anything that you would like to add that would help clarify your teaching practices?
9. Do you have any words of wisdom or practical advice to faculty who are currently teaching in an undergraduate didactic nursing course?

Interview sessions following observations – Reflection and Clarification

This interview will be *unstructured* and will be used accordingly with each participant.

- Any additional information that the researcher or participant believes needs to be discussed or clarified.
- Any unfinished questions will be addressed.

Clarification on how and why a specific teaching strategy (concept mapping, case studies, reflective thinking exercises) were implemented and what were the proposed outcomes for each strategy will be illuminated.

Appendix F
Observation Protocol

Participant code name _____

Date of Observation _____

Time: Start _____ Finish _____

Tape Recorder on:

Where am I sitting – describe the classroom – how many students

Notes:

Information Processing Theory	Concept Map Case Study Reflective ...	Time	Student Involvement low, med, high	Description
Schema	Concept Map Case Study Reflective ...		low, med, high	
App. Level	Concept Map Case Study Reflective ...		low, med, high	
Amt. new	Concept Map Case Study Reflective ...		low, med, high	
Learner-cent	Concept Map Case Study Reflective ...		low, med, high	
Const. by learner	Concept Map Case Study Reflective ...		low, med, high	
Additional practices seen	Concept Map Case Study Reflective ...		low, med, high	

Specific Examples:

Nurse Educator:

Student/s

Nurse Educator:

Student/s

Appendix G

Permission to Utilize Orientations to Teaching Questionnaire

	▶ David Kember		
Sent	Monday, March 24, 2008 11:54 pm		
To	Danette Dutra		
Cc			
Bcc			
Subject	Re: Orientations to Teaching Questionnaire		
Attachments	Lec Ques scales_finalR.doc	32K	Lecturer Quest FinalR.doc 57K

Dear Danette,

Feel free to use it as you see fit. You may need to adapt it to suit local nomenclature and the type of teaching in nursing. Attached is a copy of the questionnaire and a document showing how the items fit into scales and sub-scales.

Kind regards,

David

At 02:39 PM 3/22/2008 -0700, you wrote:

>March 22, 2008
>
>Dear Professor Kember,
>
>My name is Danette Dutra and I am a doctoral student in the Learning and
>Instruction program at University San Francisco, San Francisco California.
>My undergraduate and master's degrees are in the profession of nursing.
>
>I am currently in the process of developing my dissertation proposal. My
>research study is a qualitative design that seeks to illuminate the
>pedagogies that are currently being utilized by didactic nurse educators
>in the state of California's baccalaureate schools of nursing.
>
>I just read your 1994 article:
>
>Orientations to Teaching and Their Effect on the Quality of Student Learning
>
>David Kember; Lyn Gow
>
>The Journal of Higher Education, Vol. 65, No. 1. (Jan. - Feb., 1994), pp.
>58-74.
>I am really interested in the questionnaire you developed "Orientations to
>Teaching Questionnaire" and am writing to you in hopes that you will allow
>me to utilize all or portions of it within my study.
>Your consideration regarding this request is greatly appreciated. If you
>would like to review any of my proposal before allowing my request, please
>do not hesitate to ask.
>Thank-you for your time,
>Danette Dutra