

CLINICAL NURSE EDUCATORS' ADOPTION OF SOCIOCULTURALLY-BASED
TEACHING STRATEGIES

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Submitted to the faculty of the University Graduate School
in partial fulfillment of the requirements
for the degree
Doctor of Philosophy
in the School of Nursing,
Indiana University

May 2009

Accepted by the Faculty of Indiana University, in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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DEDICATION

I dedicate this dissertation to my family, especially...

to Brad for understanding why I must try to make a difference;

to Alison who showed continual interest and support;

to Mom who encouraged me not to be afraid;

to my late Dad who inspired me to become a nurse;

to Chris who was always “rooting” for me;

to Laura who checked to see how I was doing;

to Wilbur and Orville for their unconditional love;

and to Doug for his unrelenting love and support.

ACKNOWLEDGEMENTS

I am grateful for the support of many individuals who have contributed in countless ways to the completion of my doctoral studies and this dissertation. I wish to acknowledge my committee co-chairs, Dr. Pamela Ironside and Dr. Anna McDaniel, who have served as outstanding role models and have supported me in reaching my goals every step of the way. They are both valued colleagues who are thoroughly dedicated to nursing research. I would also like to thank Dr. Judith Halstead for her continued support and collegiality in my development as a nurse educator and Dr. Henry Merrill for his thoughtful input and confidence in me throughout my doctoral studies.

I would like to thank Dr. Diane Billings for encouraging me to reach beyond my potential, Cynthia Hollingsworth for her outstanding editing skills and continued encouragement during the final stages of the dissertation journey, Donna Butcher for her ever-present friendship and distractions for fun, Michele Carey for regularly checking in with me, Sonia Strevy for her camaraderie in nursing education, my Ph.D. cohort for being there throughout it all, and lastly to my professors who challenged me in the rigor and fashion necessary for a Ph.D. from Indiana University School of Nursing.

I would like to thank the National League for Nursing for their financial support for the pilot study, publications, leadership in nursing education, and for the opportunity to be involved with making changes in nursing education on a national level.

My study respondents, clinical nurse educators from around the country, deserve thanks for supporting my study with their gift of time in completing the survey and for their commitment to clinical nursing education.

Most importantly, I thank my family and friends for their unconditional love and support throughout this process. My family continues to be my biggest support, especially my husband, Doug, who has been my anchor in every storm and has always championed the fulfillment of my dreams.

ABSTRACT

Janet Martha Phillips

CLINICAL NURSE EDUCATORS' ADOPTION OF SOCIOCULTURALLY-BASED TEACHING STRATEGIES

Nursing education is faced with addressing the challenge of educational reform as a result of the rapid changes in the complexity of health care delivery systems, increased technology and biomedical knowledge, a shortage in nursing faculty, and increased enrollment in schools of nursing. Although national nursing organizations have called for reform and innovation in nursing education little is known about the factors that are related to educators' adoption of such changes.

The purpose of this descriptive, exploratory, correlational, survey study was to explore the adoption of socioculturally-based teaching strategies (SCBTS) by examining the following variables in relation to their adoption using Everett Rogers' diffusion of innovations model: (a) clinical nurse educators' perceived characteristics of SCBTS, (b) clinical nurse educators' perceived organizational support for innovation, and (c) selected demographic characteristics. Minimal research has been conducted regarding the factors related to clinical nurse educators' adoption of SCBTS, which may better prepare nurse graduates for today's health care system.

Findings from this study suggest that adoption is not straightforward, but the perceived characteristics of teaching strategies play an important role in the clinical nurse educator's decision to adopt or not adopt SCBTS. Rogers' model was partially supported based on the findings that clinical nurse educators were more likely to adopt a teaching

strategy if it was perceived to be advantageous, compatible, and not too complex. On the other hand, clinical nurse educators were more likely not to adopt teaching strategies that they must “try out” or that must be observable by others, which was not supportive of Rogers’ model. Adopters of SCBTS were more experienced clinical educators who felt supported by their academic organizations in terms of innovation; however organizational support for innovations was not associated with adoption of the teaching strategies. Holding a certificate in a nursing specialty, the type of program in which the educator taught, and the age of the educator were not associated with the adoption of SCBTS. Future research using Rogers’ model or other appropriate models is called for to further explore the adoption of SCBTS by clinical nurse educators.

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Getting a new idea adopted, even when it has obvious advantages, is difficult.
— Everett M. Rogers, *Diffusion of Innovations*

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ABBREVIATIONS

Abbreviations	Terms
BSN	Bachelor of science in nursing
CVI	Content Validity Index
DI	Direct instruction
IRB	Institutional Review Board
NLN	National League for Nursing
PAAI	Phillips Adoption Appraisal Instrument
POS	Perceived organizational support
RN	Registered nurse
SCBTS	Socioculturally-based teaching strategies
SCT	Sociocultural theory
SPSS	Statistical Package for the Social Sciences, Inc.
ZPD	Zone of proximal development

CHAPTER ONE

INTRODUCTION

Nursing education is faced with addressing the challenge of educational reform as a result of the rapid changes in the complexity of health care delivery systems, increased technology and biomedical knowledge, a shortage in nursing faculty, and increased enrollment in schools of nursing (Diekelmann, 2003; Halstead, Rains, Boland, & May, 1996; Ironside, 2005; National League for Nursing [NLN], 2005; Tanner, 2007; Valiga, 2006). A transformation is needed in nursing education in which innovative models are employed to better prepare students for the realities of contemporary practice (Diekelmann & Lampe, 2004; NLN, 2005; Tanner, 2006; Valiga, 2003). Although national nursing organizations have called for reform and innovation in nursing education (e.g., American Association of Colleges of Nursing, 2008; NLN, 2005) little is known about the factors that are related to educators' adoption of such changes.

Clinical nursing education currently is structured around individual and cognitive learning theories that are manifested in competency-based curricula containing assessment, teaching, and evaluation of student learning based on observable behavioral outcomes (Bastable, 1997). Even though this approach has served the profession well over time, it does not uphold advances in teaching and learning to prepare nurse graduates to face a critically different, multifaceted health care system (Bevis & Watson, 1989; Diekelmann, 2003). The use of sociocultural theory (SCT) (Vygotsky, 1978) may provide a salient theoretical underpinning to clinical nursing education, research, and scholarship at the same time as it may provide a better education to meet the complex needs of today's learners.

This study focused on the exploration of the adoption of socioculturally-based teaching strategies (SCBTS) by clinical nurse educators. Everett Rogers' (2003) diffusion of innovations model was used (with permission from the author; see Appendix A) as the theoretical framework to explain significant factors that are present when nurse educators consider adopting SCBTS. Rogers' model is a robust and powerful model that has been well developed and researched over the past 40 years across many disciplines (Haider & Kreps, 2004; W. Smith, 2004). Ultimately, information gleaned from this study may

provide a foundation for nurse educators to draw upon when considering the adoption of new teaching strategies based on evidence.

The background and significance for this study is described in this chapter, followed by the theoretical framework and related theoretical underpinnings, purpose of the study, research questions, definition of terms, assumptions, and limitations.

Background and Significance

Clinical teaching is considered to be a hallmark of nursing education, and it requires expert clinical faculty whose main focus is to prepare skilled, safe, and competent nurse graduates for today's health care environment (Hsu, 2006; Lee, Kim, Roh, Shin, & Kim, 2007; O'Connor, 2001; Tanner, 2006). Unfortunately, clinical teaching is the least studied of all educational activities in nursing education (DeYoung, 2003; Makarem, Dumit, Adra, & Kassak, 2001). Research about how clinical educators learn to teach and what thinking and/or knowledge drive their teaching practices is lacking in the literature.

Most clinical educators tend to teach as they were taught, and many have not been educated in the art and science of educational scholarship (Hsu, 2006; Scanlan, 2001; Valiga, 2006). Consequently, traditional methods of teaching based on hierarchical teacher-centered and content-driven training models remain the status quo in many institutions (Falk-Rafael, Chinn, Anderson, Laschinger, & Rubotsky, 2005; Pardue, 2005). The traditional teaching model has served nursing education well by providing a highly organized, evaluation-oriented profession that has supplied reliable nursing service (Bevis & Watson, 1989; Diekelmann, 2003). However, the traditional teaching and learning model is no longer viable in today's complex health care environment (Tanner, 2006).

There is a paucity of research about how clinical educators learn to teach and what thinking and/or knowledge drives their teaching practices. Effective clinical teaching includes a multitude of variables, and no single evaluative criterion is sufficient per se (Marsh & Roche, 1997). A comprehensive review of clinical nursing education literature suggests that opportunities exist to improve research in clinical nursing education. Improvements are needed in the theoretical, methodological, and measurement aspects of clinical nursing education research, as is the case for nursing research in

general (Yonge et al., 2005). If clinical educators are to improve clinical nursing education, the inadequacies and the gap in the teaching and learning studies will need to be addressed (Phillips, 2007a).

Recent trends in registered nurse (RN) education programs reveal an interest in employing more active, evidence-based teaching strategies to effectively meet the changing expectations for today's learners (Speziale & Jacobson, 2005). Learning environments that include the contextual factors of the clinical setting allow learners to shift from merely learning technical skills to collaboratively developing multidimensional skills in order to function in a complex and rapidly changing health care environment. The teaching-learning process needs to be reconceptualized as a participatory process model wherein students develop self-reliance to function in the rapidly changing situations that characterize the health care systems of today and tomorrow (Lunyk-Child et al., 2001).

The adoption of SCBTS is significant to the discipline of nursing and is in line with present goals set forth by national nursing organizations to reform the nursing education practices needed to prepare nurse graduates to face complex, demanding, and dynamic practice environments. The findings from this study may add to the science of nursing education by providing an evidence-base for nurse educators to draw upon as they consider the adoption of new, evidence-based teaching strategies.

Rogers' (2003) diffusion of innovations model is ideal for examining the norms of the social system within which nurse educators practice as well as the perceived characteristics of SCBTS and their relation to adoption. The characteristics of the innovation and organizational climates are important factors for the diffusion and usage of innovations within academic settings (Ash, 1997). Future educational intervention models thus can be developed for nurse educators to improve clinical nursing education.

Rogers' (2003) Diffusion of Innovations Model

Everett Rogers' (2003) diffusion of innovations model was used as a framework to explore nurse educators' adoption of SCBTS. Rogers' model is a well-researched model and has been used to study adoption and diffusion of innovations in a multitude of disciplines (Haider & Kreps, 2004; W. Smith, 2004). Rogers' model attempts to explain how individuals proceed through the stages of the innovation-decision process when considering the adoption of an innovation.

Rogers (2003) defines innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p. 12). Adoption of an innovation begins with prior conditions which are factors that foster the need for awareness or the need for additional knowledge about an innovation (Rogers, 2003). Prior conditions include (a) the previous practices used by the person, (b) the felt needs or problems that may act as a stimulus to seek knowledge about an innovation or to change a behavior, (c) the innovativeness of the individual or eagerness to change or to adopt an innovation, and (d) the norms of the social systems in which the individual participates. Norms of the social system were one focus of the study, specifically, perceived organizational support (POS).

Rogers' (2003) model of the innovation-decision process includes five stages consisting of knowledge, persuasion, decision, implementation, and confirmation (see Figure 1, Chapter 2). Knowledge occurs when an individual is exposed to an innovation. Persuasion occurs when an individual forms a favorable attitude toward the innovation. The decision transpires when the individual engages in activities that lead to the choice to adopt or reject the innovation. Implementation occurs when an individual puts the idea to use. Confirmation occurs when the individual seeks reinforcement of an innovation-decision already made. It is during the persuasion stage, just before the decision to adopt is made, that the individual must weigh the perceived characteristics or attributes of the innovation. These characteristics include relative advantage, compatibility, complexity, trialability, and observability. The perceived characteristics of innovative teaching strategies were another major focus of this study.

Rogers' (2003) model has been used extensively in the general education literature (Bussey, Dormody, & VanLeeuwen, 2000; Pankratz, Hallfors, & Cho, 2002; Steckler, Goodman, McLeroy, Davis, & Koch, 1992) and in clinical practice literature (Aubert & Hamel, 2001; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Herbert & Benbasat, 1994; Lee, 2004; Panzano & Roth, 2006) to study the adoption of innovations. Research from these areas can inform nurse educators of the application of Rogers' model in the adoption of SCBTS as a result of the similarities in variables such as organizational structure and the perceived characteristics of an innovation on the adoption of new ideas.

There is a dearth of literature in clinical nursing education using Rogers' (2003) diffusion of innovations model (Ihrke, 2002; Nugent, 1992); therefore, little is known about how clinical educators adopt the use of teaching strategies and how the strategies diffuse across the discipline. This study explored the adoption of SCBTS, which can inform nursing education of factors associated with adoption when clinical nurse educators consider new teaching strategies.

Without knowledge and adoption of SCBTS by nurse educators, nursing students may continue to be educated in out-dated teaching methods that may not prepare them fully for complex work environments in health care, ultimately resulting in potentially unsafe practices in client care. By adopting SCBTS, nurse educators may offer the best possible education to nursing students, thus preparing them for work environments in which they will thrive and deliver safe, quality client care.

Perceived Organizational Support

Perceived organizational support was considered to be a norm of the social system of clinical nurse educators for this study. The norms of the social system are included in Rogers' (2003) prior conditions in the innovation-decision process. The theory of POS (Eisenberger, Cummings, Armeli, & Lynch, 1997; Eisenberger, Huntington, Hutchinson, & Sowa, 1986; Rhoades & Eisenberger, 2002; Shore & Shore, 1995) contends that individuals form common beliefs concerning how much the organization values their contributions and is concerned for their welfare.

As the clinical practice setting continues to evolve as a result of the changes brought about by information technology and health care delivery, it is vital to consider the importance of POS in the adoption of new teaching strategies. Nurse educators who feel supported by their organizations may be more likely to adopt SCBTS; therefore, POS was included as a variable in this study.

Organizational Climate

Moos (1994) described organizational climate as a member's perception of the current patterns of interaction in an organization or the personality of a setting or environment. The level of POS directly influences organizational climate within an organization (Dee, 1999; Eisenberger et al., 1997; Gregory, Henry & Schoeny, 2007; Lubbert, 1995; Siegel, 1985; Siegel & Kaemmerer, 1978). The climate of nurse educators' academic institutions may influence their willingness to engage in change-related activities such as the adoption of SCBTS. Siegel identified five dimensions of innovative organizational climates: leadership, ownership, norms for diversity, continuous development, and consistency. For the purposes of this study, three of Siegel's (1985) five organizational climate dimensions, which are characteristics of innovative organizations, were used to measure POS in the sample: leadership, ownership, and norms for diversity. These organizational climate dimensions parallel Rogers' (2003) concepts in his diffusion of innovations model, thus forming an ideal match for measuring the variables. This study sought to determine dimensions of organizational climate that are related to clinical educators' adoption of SCBTS.

Sociocultural Learning Theory

The underpinnings of sociocultural learning theory, also known as SCT, suggest that social and cultural interaction plays an essential role in the development of cognition (Wertsch, 1991). The sociocultural approach asserts that human cognitive learning is inherent in social, cultural, institutional, and historical contexts (Wertsch, 1991). Sociocultural theory draws on the work of Vygotsky (1896–1934), a Russian social psychologist and theorist who influenced modern constructivist thinking more than any other individual (Moll, 2004). This important theorist and social psychologist emphasized the dynamic interdependence between the social, cultural, and individual processes of learning (John-Steiner & Mahn, 1996).

The impact of Vygotsky's ideas has grown substantially, particularly after the translation and English publication of a selection of his writings in "Mind in Society" in 1978. Vygotsky's (1978) six key concepts of SCT include zone of proximal development (ZPD), internalization, scaffolding, intersubjectivity, cognitive apprenticeship, and assisted learning. Sociocultural theory may be helpful in understanding complex interactions associated with learning in the clinical and professional settings (Spouse, 2001).

Bonk and Kim (1998) created a list of SCBTS for adults that may be adopted by clinical nurse educators, and it was operationalized to create the instrument used for this study. Socioculturally-based teaching strategies incorporate social, cultural, contextual, and institutional factors in the learning environment and ultimately encourage students to be responsible for their own learning (Bonk & Kim, 1998). These strategies may be more conducive to the underpinnings of contemporary pedagogy in clinical nursing where today's nurse graduates must think about each complex practice situation to deliver individualistic, competent, holistic care (Peters, 2000; Sanders & Welk, 2005).

Purpose

The purpose of this study was to explore the adoption of SCBTS, using Rogers' (2003) diffusion of innovations model, reported by clinical nurse educators. The relationship of the following variables were explored and analyzed in relation to the adoption of SCBTS: (a) clinical nurse educators' perceived characteristics of SCBTS (relative advantage, compatibility, complexity, trialability, and observability); (b) clinical nurse educators' POS (leadership, ownership, and norms for diversity); and (c) selected demographic characteristics.

Definition of Terms

The following terms are defined for this study as follows:

1. *Adoption* is defined as a "decision to make full use of an innovation as the best course of action available" (Rogers, 2003, p. 177) (e.g., adoption of any of Bonk and Kim's [1998] SCBTS in this study).
2. *Clinical nurse educator* is defined as an RN who educates pre-licensure nursing students in a clinical practice setting within a school of nursing after completing an online course focusing on clinical teaching.

3. *Diffusion of innovations* is defined as “the process by which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 35).
4. *Innovation* is defined as an idea, practice, or object that is perceived as new by an individual or another unit of adoption (Rogers, 2003). In this study, SCBTS were considered innovative to nurse educators who use traditional teaching models.
5. *Innovation-decision process* is defined as the process through which an individual passes from first knowledge of an innovation to adoption or rejection and then confirmation of the decision (Rogers, 2003).
6. *Norms of the social system* is defined as established behavior patterns for members of a social system that define tolerable behavior and serve as a guide to standard behavior (Rogers, 2003).
7. *Organizational climate* is defined as members’ perceptions of the current patterns of interaction in their organizations or the personality of a setting or environment (Moos, 1994).
8. *Perceived characteristics of the innovation* are defined as perceptions or attributes of an innovation that are associated with adoption (of SCBTS, in this study) including (a) *relative advantage* (the degree to which an innovation is perceived as better than the idea that it supersedes); (b) *compatibility* (the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of the potential adopters); (c) *complexity* (the degree to which an innovation is perceived as difficult to understand and use); (d) *trialability* (the degree to which an innovation may be *experimented with* on a limited basis); and (e) *observability* (the degree to which the results of an innovation are visible to others) (Rogers, 2003).
9. *Perceived organizational support* is defined as beliefs among an organization’s members regarding how much the organization values members’ contributions and is concerned for their welfare (Rhoades & Eisenberger, 2002).

10. *Prior conditions* are defined as factors that foster the need for awareness or the need for additional knowledge about an innovation (Rogers, 2003).
11. *Selected characteristics of nurse educators* are defined as the demographics in the Phillips Adoption Appraisal Instrument (PAAI) for this study including (a) years practicing as a nurse, (b) years practicing as a clinical educator, (c) working full-time or part-time, (d) total years of teaching, (e) type of nursing program in which the educator is teaching, (f) highest level of formal education, (g) professional certification(s) held, (h) when enrolled in the clinical faculty course, (i) have enrolled in programs focusing on teaching in nursing, (j) gender, (k) age, and (l) race/ethnicity.
12. *Socioculturally-based teaching strategies* are defined as teaching strategies that embrace the tenets of SCT as described by Bonk and Kim (1998): (a) *modeling* (to illustrate performance standards and to verbalize internal processes); (b) *coaching* (to observe and supervise students in guiding them toward expert performance); (c) *scaffolding and fading* (to support what learners cannot yet do and gradually to remove that support as competence is displayed); (d) *questioning* (to request verbal responses from learners by supporting them with mental functions they cannot produce alone); (e) *articulation* (to encourage verbal or written expression of learners' problem-solving processes); (f) *exploration* (to push student examination and application of independent problem-solving skills); (g) *reflection* (to foster student problem-solving processes through comparison of learners' practice with previous practice or with the practice of expert practitioners or other learners); (h) *cognitive task structuring* (to explain and organize a task within the learners' zone of proximal development); (i) *managing instruction* (to assist learning through performance feedback and positive reinforcement); and (j) *direct instruction* (DI) (to assist learning through instructor-led lessons, with practice and feedback to provide clarity, needed content, and missing information).

13. *Sociocultural theory* is defined as a learning theory whereby human mental functioning is innately positioned in social, cultural, institutional, and historical contexts (Wertsch, 1991).
14. *Support for innovation* refers to the extent to which individuals perceive that their organizations facilitate the development and use of new ideas (e.g., SCBTS, for this study) among their members (Siegel & Kaemmerer, 1978).
15. *Traditional teaching models in nursing* are defined as the use of teacher-centered strategies by nurse educators with expectations of passive student roles, the use of formal testing, the tight control of students, and the use of one predominant teaching method (Schaefer & Zygmunt, 2003).
16. *Zone of proximal development* is defined as the distance between what one can achieve alone and what one can achieve with help (Vygotsky, 1978).

Assumptions

1. An increase in the adoption of SCBTS will improve the preparation of graduate nurses for increasingly complex work environments in health care.
2. Nurse educators want to use the best possible teaching strategies in their education practice.
3. Nurse educators are able to identify and accurately report their perceptions of institutional support for innovation.
4. Nurse educators are able to identify and accurately report their perceived characteristics of SCBTS.
5. Teaching strategies based on SCT may be considered to be innovative to nurse educators who use traditional teaching models.

Limitations

1. The limitations of self-report instruments were recognized, including the uncertainty of respondents' representation of reality and possible impact on the validity of the data. Data based on self-report may be potentially biased by evoking socially desirable responses.
2. The PAAI may not have clearly described all of the SCBTS, and therefore not all items may have been completely understood by respondents.

3. Convenience sampling limits the study in its ability to generalize from the target population to all nurse educators.
4. There may be respondents who received invitations to participate in the research but did not respond or may have responded incompletely to the survey. It is not possible to find out their rationale, which may result in a biased sample.
5. Measuring the perceived characteristics of innovation (Rogers, 2003) and POS represents only some of the factors that may be related to the adoption of SCBTS. The influence of other factors influencing adoption is unknown.
6. All respondents were enrolled in an online course focusing on clinical teaching and thus may be more likely to adopt SCBTS. This may potentially result in a biased sample.
7. The sample size was small; therefore, the results may not be generalizable to the larger population.
8. The open-ended question was analyzed using qualitative content analysis and may not have captured the essence of the reported teaching strategies related to SCT or the adoption of SCBTS by clinical nurse educators as a result of the brief answers and the survey format.

The next chapter provides a literature review of (a) the state of the science of clinical nursing education, (b) Rogers' (2003) diffusion of innovations model, (c) POS, (d) organizational climate, (e) SCT, (f) synthesis and critique of literature related to SCBTS in clinical nursing education, (g) gaps in the literature and implications for this study, (h) limitations of SCT, (i) practical and scholarly significance of SCT in clinical nursing education, (j) preliminary studies informing foundational information for this study, and (k) a conclusion of the literature review.

CHAPTER TWO

REVIEW OF LITERATURE

The purpose of this study was to describe SCBTS that have been reported by clinical nurse educators, the perceived characteristics of the SCBTS, and the POS for innovation. The relationship among clinical nurse educators' perceived characteristics of SCBTS, POS, and demographic characteristics were explored in relation to the adoption of SCBTS. Given the daunting task of educating competent nurses to be *work-ready* in extremely complex health care settings, it is imperative that the clinical nursing education literature be reviewed. This review begins with a description of the state of the science of today's clinical teaching and learning research, and consequently serves as a launch pad for the literature review of the theoretical underpinnings of the study that follows.

It is necessary to assess both individual and system factors that are perceived to be associated with the adoption of SCBTS by clinical nurse educators in order to address the urgently needed changes in teaching and learning; thus, three underlying theories for this study are reviewed: (a) Everett Rogers' (2003) diffusion of innovations, (b) POS and organizational climate, and (c) sociocultural learning. Next, an integrative review of the research representing SCBTS in clinical nursing education in the past decade is presented and critiqued, followed by the practical and scholarly significance of the integrative review to this study. A discussion of the preliminary studies that shaped this research study, the NLN-funded pilot study, and the PAAI pilot study is then reviewed. A general summary of the literature review concludes the chapter.

State of the Science of Clinical Nursing Education Literature

Although clinical activities are the heart of nursing education, where theoretical principles are applied to practical situations, clinical teaching is the least studied of all educational activities (DeYoung, 2003; Makarem et al., 2001). Yonge et al. (2005), in their comprehensive, systematic review of nursing education literature, found that only 4.4 percent of studies between 1991–2000 related to clinical teaching whereas 16.6 percent related to classroom curricula. In addition, there has been a recent shift in the trend of nursing literature toward clinical nursing issues; thus, a serious gap exists in research about how nurse educators are teaching in the clinical setting (Stevens, 1999).

There is a paucity of research about how clinical nurse educators learn to teach and what thinking and/or knowledge drives their teaching practices. Research over the past decade regarding clinical education has been largely intended to identify teaching behaviors as explicated by clinical educators or nursing students (Allison-Jones & Hirt, 2004; Beitz & Wieland, 2005; Benor & Leviyof, 1997; Cook, 2005; Gignac-Caille & Oermann, 2001; Hsu, 2006; Johnsen, Aasgaard, Wahl, & Salminen, 2002; Kotzabassaki et al., 1997; Li, 1997; Makarem et al., 2001; Nahas, Nour, & Al-Nobani, 1999; Nahas & Yam, 2001; Scanlan, 2001; Tang, Chou, & Chiang, 2005). However, effective teaching is multidimensional, and no single evaluative criterion is sufficient per se (Marsh & Roche, 1997). Furthermore, limited studies have been conducted to examine the theoretical significance of clinical teaching, and very few studies have been replicated or cross-validated (Andrews et al., 2001; Cook, 2005; DeYoung, 2003; Diekelmann, 2001; Kautz, Kuiper, Pesut, Knight-Brown, & Daneker, 2005; Liimatainen, Poskiparta, & Sjogren, 2001; Makarem et al., 2001).

Most of the studies in clinical nursing education have small sample sizes, use different methods and instruments, and have restricted settings (Yonge et al., 2005). The scarcity of well-designed studies in clinical nursing education is likely a result of the complexity and unpredictability of the clinical situations, which are difficult to reproduce in the clinical laboratory where many clinical skills are evaluated (DeYoung, 2003). Adding to the difficulties of clinical education studies is the measurement of student learning on didactic classroom tests and/or in skill demonstrations in clinical laboratories, which may or may not indicate whether students can accurately apply theoretical principles in the clinical setting.

The literature to date concerning clinical teaching maintains mostly variations of the traditional apprenticeship model, which does not bring desperately needed changes to the art and science of clinical nursing education. The clinical nursing education research literature is largely a-theoretical and/or based in behavioral learning approaches (DeYoung, 2003; Gaberson & Oermann, 2007) and does not uphold advances in teaching and learning as described by education scholars such as Bransford, Brown, and Cocking (2000). Behavioral objectives, most commonly found in the literature, may be the least relevant in the clinical setting where the cognitive, psychomotor, and affective domains

interact simultaneously and are interdependent (O'Conner, 2001). Behaviorist learning models fail to explain how learning occurs in dynamic, complex, and unstable systems (Bleakley, 2006).

Clinical nursing education is structured around individual and cognitive learning theories that are manifested in competency-based curricula containing assessment, teaching, and evaluation of student learning based on observable behavioral outcomes (Bastable, 1997). Current individual and cognitive learning theories profess that learning occurs independently of the context wherein skills and concepts are learned by breaking complex tasks into small parts taught to individual learners in isolation (Deci & Ryan, 1985). In effect, the outside environment is given little attention in the way adults think and learn, regardless of the learners' sociocultural background (Cafarella & Merriam, 1999). Student success is often seen as a reflection of individual beliefs, values, and goals for learning. This perspective shows little consideration for the context of their lived experiences and how it is associated with learning.

Clinical teaching is vital to the development of safely practicing, competent graduates who face complex, changeable work environments. A clinical educator's ability to make the climate of the learning environment conducive to learning is imperative, and the time spent by the clinical educator with the students must be quality time spent in the teaching-learning situation, which is difficult when supervising many students at once (Gaberson & Oermann, 2007; Nahas et al., 1999; Nahas & Yam, 2001). However, most clinical educators tend to teach as they were taught (Hsu, 2006; Scanlan, 2001; Valiga, 2006), and the majority has not been educated in the art and science of teaching. There is a call, which has been consistently present throughout the nursing education literature, to improve clinical teaching through professional development as well as masters' and doctoral level education in the science of teaching and learning that contain curricula in the specialized knowledge of teaching and learning (Valiga, 2006).

Evidence of the need to inform clinical educators about how to teach students in the clinical environment abounds in the literature (Hermann, 1997; Scanlan, 2001; Schaefer & Zygmunt, 2003; Sellappah, Hussey, Blackmore, & McMurray, 1998). Evidence (Ironsides, 2006; Stevens & Valiga, 1999; Valiga, 2006) is needed to provide a foundation from which nurse educators can draw when adopting new teaching strategies.

The clinical nursing education literature continues to be largely a-theoretical, thus stalling attempts for much needed substantive nursing education reform (Phillips, 2007a). More studies are needed using theoretical frameworks that can provide substantial contributions to nursing education based on evidence.

Reviews of clinical nursing education studies suggest that opportunities exist to improve research in clinical nursing education. Improvements are needed in the theoretical, methodological, and measurement aspects of clinical nursing education research, as is the case for nursing research in general. If clinical educators are to improve clinical nursing education, the gap in the teaching and learning studies will need to be addressed (Phillips, 2007a).

A great deal of innovation is occurring in schools of nursing, but it is often not shared outside of the organization or institution (Iwasiw, Goldenberg, & Andrusyszyn, 2005). The dearth of literature and research on the adoption and effectiveness of new teaching strategies and curricula in clinical nursing education points to a critical need to study adoption of new teaching strategies in order to provide needed evidence-based research that can be shared with the larger community of nurse educators. This study addressed the research gap by exploring the adoption of SCBTS by clinical nurse educators.

Everett Rogers' (2003) theory of diffusion of innovation was used as a framework to study the significant factors related to clinical nurse educators' adoption of new teaching strategies, specifically the perceived characteristics (attributes) of the innovation and norms of the social system (POS for innovation and organizational climate). Rogers' framework has been used extensively in the general education and clinical nursing practice literature, which makes it particularly applicable to clinical nursing education as a result of the similarities in variables such as organizational structure and the perceived characteristics of an innovation on the adoption of new ideas.

Diffusion of Innovations

Everett Rogers' (2003) diffusion of innovations model served as the theoretical framework for this study. The model was built on the works of varying independent diffusion researchers from many disciplines who discovered similar findings such as adoption of innovations showing an S-shaped curve over time (Mort, 1957; Rogers, 2003; Ross, 1958). Diffusion research traditions have continued to range across many disciplines including anthropology, sociology, education, public health and medical sociology, communication, marketing and management, and geography.

Rogers' (2003) model was influenced by research from many disciplines but was most influenced by the classic study conducted by Ryan and Gross (1943) that revealed the adoption and worldwide diffusion of hybrid corn by Iowan farmers. Hybrid corn was adopted by a small number of farmers, which spread to adoption by other farmers based on the communication channels described by Rogers. Trends in the last decade in diffusion research based on Rogers' model proceeded in a multitude of disciplines. No studies were found in clinical nursing education; however, studies in education (Bussey et al., 2000; Ihrke, 2002; Pankratz et al., 2002) and clinical practice (Denis, Herbert, Langley, Lozeau, & Trottier, 2002; Lee, 2004; Panzano & Roth, 2006) were found, which are applicable to the educational setting as a result of the similarities in organizational structure and adoption of innovations based on the perceived characteristics of the innovation.

Everett Rogers, a distinguished professor and diffusion researcher, first published "Diffusion of Innovations" in 1962, which has been followed by four subsequent editions, each a decade apart. His books are considered to be citation classics as a result of the large number of citations (approximately 7,000) that they have received in social science journal articles. Rogers (2003) compiled research findings from approximately 5,200 studies and organized a general diffusion model describing the diffusion process and adopter categories.

Diffusion is defined by Rogers (2003) as "the process by which an innovation is communicated through certain channels over time among the members of a social system" (p. 35). There is a unique form of communication that occurs in this process which is concerned with the diffusion of messages that are perceived as new ideas. An

innovation is defined by Rogers as “an idea, practice, or object perceived as new by an individual or other unit of adoption such as an organization” (p. 36). The characteristics of an innovation, as perceived by the members of a social system, determine the rate of adoption. The five perceived characteristics, or attributes, of innovations include relative advantage, compatibility, complexity, trialability, and observability. This study focused on the perceived characteristics of SCBTS because they are the greatest factors in determining the rate of adoption (Rogers), which has been supported by numerous studies in the literature (e.g., Denis et al., 2002; Murray, 2007; Schmidt & Brown, 2007).

Time is associated with diffusion in three ways: the innovation-decision process, innovativeness, and an innovation’s rate of adoption. The innovation-decision process is the process through which individuals pass from the first knowledge of the innovation to forming an attitude toward the innovation, to a decision to adopt or reject it, to implementation of a new idea, to confirmation of the decision (Rogers, 2003). The five-step process can be conceptualized as including knowledge, persuasion, decision, implementation, and confirmation. Innovativeness is the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social organization. Adopter categories include classifications of the members of a social system based on their innovativeness, which include innovators, early adopters, early majority, late majority, and laggards. The rate of adoption is the time that it takes for an innovation to be adopted within a social system. Champions are charismatic individuals who put their energy behind an innovation, thus overcoming collective indifference or resistance to new ideas within organizations.

The social system is a set of interrelated units that are engaged in the problem-solving process to accomplish a common goal (Rogers, 2003). The social system has structure, providing stability and regularity to behavior in the system. The social communication within the system either facilitates or impedes the diffusion of innovations within a system. Norms of the social system are the established behavior patterns for members of the system. A person who is considered to be the opinion leader influences other individuals’ attitudes or behaviors about an innovation. A change agent is one who attempts to influence another individual’s innovation-decision process and plays an important role in diffusion of innovations within an organization (Hilz, 2000).

Within Rogers' (2003) diffusion process, an example of a social system may be an educational institution. In an academic social system such as a school of nursing, nurse educators consist of a majority of its members. In the past, it has been assumed that individuals rationally will choose to adopt superior innovations to replace outdated practices (Rogers). Individuals are assumed to be ready, willing, and able to adopt innovations quickly and easily. It has also been supposed that desired innovation is *good* and is more advantageous than the older innovation or process.

Particularly within organizations, research has shown that none of the above assumptions are true; 50 to 70 percent of large organizations' implementations and change efforts fail to be adopted (Hammer & Champy, 2001). Communication channels in the diffusion process are the means by which messages travel from one individual to another. Most individuals assess an innovation through the subjective evaluations of peers who have previously adopted the innovation, through the communication channels, not on the basis of scientific research (Rogers, 2003).

The greatest single educational system barrier for innovation may be the system itself (Hannafin, Dalton, & Hooper, 1987). Most nurse educators teach in the manner in which they were taught (Hsu, 2006; Scanlan, 2001; Valiga, 2006) and are often inadequately supported to make changes. There is ample evidence that many schools resist change both actively and passively causing numerous efforts for adoption of new ideas to be thwarted (Latham, 1988).

The organizational culture in academic institutions is infamous for resistance to change as a result of long-held traditions and the desire to maintain the status quo (Dee, 1999; Dee, Henkin, & Pell, 2002; Keup, Walker, Astin, & Lindholm, 2001). The past three decades have brought wide-spread social, political, economic, and technological change, but schools have not changed their basic organizational structure of teaching and learning (Dooley, 1999). Resistance to change is a significant barrier in the adoption of new ideas in educational settings in light of longstanding traditions and a wide variety of subcultures or countercultures (Keup et al., 2001; Kusmierk, 2001).

Nursing education is challenged by resistance to change; it is the major reason for lack of innovation and is considered to be a major impediment to change (Pardue, 2005). Faculty resistance to change was addressed in this study by measuring the prior condition

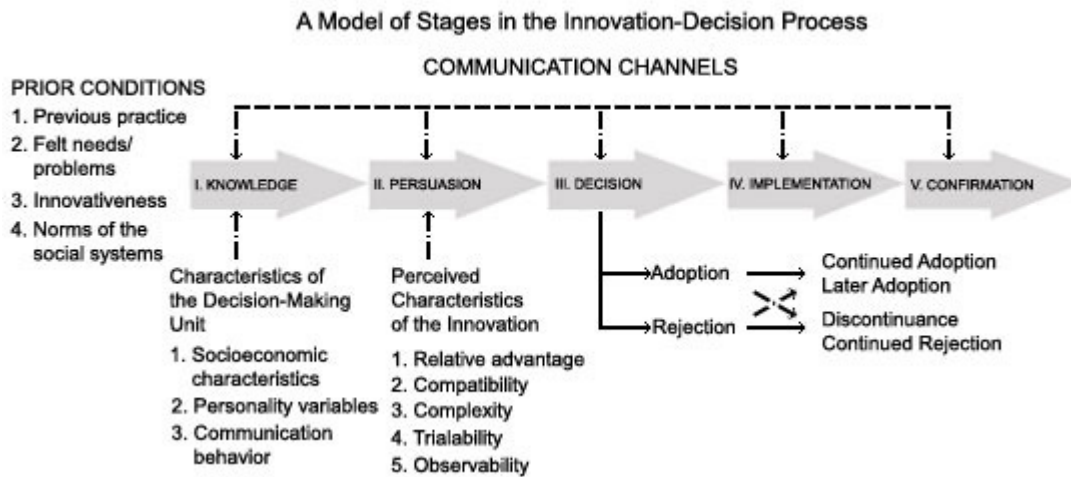
of norms of the social system (POS) in Rogers' (2003) model. Norms can be a barrier or a facilitator of change and can operate at the level of a nation, a community, or an organization. Resistance to change may reside in the organizational climate within an academic organization, which can significantly affect the adoption or rejection of innovations through the communication channels of individuals and groups within the organization (Dee, 1999; Siegel & Kaemmerer, 1978).

Other barriers to change may include a perceived environmental uncertainty and the social climate of the work setting (Garrett & McDaniel, 2001). Clinical educators may view changes in the teaching approaches within the academic and/or clinical environments through a lens of uncertainty as a result of the perception that crucial information about the changes may not be available, thus leading to an inability to predict changes in the environment. The social climate of the academic and/or clinical work setting also may affect the clinical nurse educator because the adoption of new teaching and learning approaches may or may not be supported by peers or administrators.

The Innovation-Decision Process

Scholars of diffusion have been well aware that an individual's decision about an innovation is not made hastily but is a process that occurs over time and consists of a variety of actions (Moore & Benbasat, 1991; Rogers, 2003; Ryan & Gross, 1943). Rogers contends that adoption of innovations is largely affected by prior conditions, before the innovation-decision occurs. The prior conditions in the innovation-decision process include previous practice, felt needs/problems, innovativeness, and norms of the social system. Rogers' innovation-decision process constitutes five stages: knowledge, persuasion, decision, implementation, and confirmation (see Figure 1).

Figure 1. Stages of Rogers' (2003) innovation-decision process.



From *Diffusion of Innovations, 5th Edition* by Everett M. Rogers. (F. 5.1, p. 170).

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Prior Conditions

The factors in the academic setting influencing the adoption of innovations to be considered are numerous. These factors may act as facilitators or inhibitors to the adoption of an innovation. Rogers' diffusion of innovations model (2003) offers a description of these factors and has termed them *prior conditions*. Prior conditions are defined as the factors that foster the need for awareness, the need for additional knowledge about an innovation, or the need/ability to change. There are four prior conditions: previous practices, felt need/problem, innovativeness, and norms of the social system. The prior conditions influence not only the rate of adoption but also whether the new idea initially is considered for adoption. The prior condition of the norms of the social system, POS for innovation, was one of the variables of this study.

Previous practices in this study would consist, for example, of the past teaching practices of clinical nurse educators in order to meet the learning needs of their students. These practices occur within the social system of the academic institution in which educators work in addition to their nursing practice settings. These behaviors are a result, in part, of the norms of the social system. If nurse educators are emulating previous

teaching practices, they may not be aware of new pedagogies and may be teaching using out-dated methods. On the other hand, nurse educators may be well aware of SCT and using SCBTS, or they may be deliberately not using them for a variety of reasons that may be related to contextual factors of the work setting.

Felt need/problem pertains to nurse educators' belief that a teaching strategy will serve a need or solve a problem in their teaching practices. Nurse educators may or may not have a felt need to change their teaching practices. Innovativeness is the willingness to accept new ideas and to change behavior (Rogers, 2003). In general, academic institutions, and nurse educators who are employed by them, are reluctant to change (Gwele, 1996; Pardue, 2005; Valiga, 2003). Presently there is a lack of research on the need for change and the effects of change once instituted in clinical nursing education (Valiga, 2006).

As described previously, norms of the social system are the established behavior patterns for the members, defining a range of tolerable behaviors that guide their actions (Rogers, 2003). An innovation is more likely to be adopted if it lies within the confines of the norms of the social system. Norms tell individuals what behavior they are expected to perform within the system. These norms can be barriers or facilitators of change and can operate at the level of a nation, a community, or an organization. Norms within organizations (West, Barron, Dowsett, & Newton, 1999) or social environments (Kelly et al., 1992) can significantly affect the adoption or rejection of innovations within the organizations' members (Cohen, 2007; Doughty, May, Butell, & Tong, 2002; Keup et al., 2001).

Stages of the Innovation-decision Process

Rogers' (2003) innovation-decision process constitutes five stages: knowledge, persuasion, decision, implementation, and confirmation. The knowledge begins when an individual is exposed to an innovation's existence and gains understanding of how it functions. The persuasion stage occurs when the individual forms an attitude toward the innovation that is favorable or unfavorable; the individual becomes more psychologically involved with the innovation. During the persuasion stage the individual considers the characteristics (attributes) of the innovation. In the decision stage, the individual makes the decision to adopt or reject the innovation. Adoption is the decision to use an

innovation as the best course of action available. In stage four, the implementation stage, the individual puts an innovation to use, involving an overt behavior change as the new idea is put into practice.

It is during the persuasion stage, just before the decision to adopt or reject the innovation, that the person must weigh the perceived characteristics of the innovation (Rogers, 2003). These perceived characteristics include relative advantage, compatibility, complexity, trialability, and observability. The relative advantage is the degree to which an innovation is perceived as better than the idea that it supersedes. Compatibility is the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of the potential adopters. Complexity is the degree to which an innovation is perceived as difficult to understand and/or use. Trialability is the degree to which an innovation may be experimented with on a limited basis prior to implementation. Observability is the degree to which the results of an innovation are visible to others. The five variables of the perceived characteristics were a focus for this study because they are the most important variables in the rate of adoption (Denis et al., 2002; Moore & Benbasat, 1991; Rogers, 2003).

As individuals proceed through the prior conditions before the decision process, they consider factors that foster the need for awareness and knowledge as well as the need to change. The social norm of POS may be very influential when making decisions about adopting new ways of teaching in academic organizations. During the stages of the innovation-decision process, the decision to adopt an innovation is associated with the extent of the perceived characteristics of the innovation. As a result of the magnitude of the weight on adoption that is made by adopters considering the perceived characteristics of an innovation as previously mentioned, Rogers' diffusion of innovations model (2003) was chosen as the conceptual framework for this study.

There were no studies found using Rogers' (2003) model that addressed the adoption of teaching strategies in clinical nursing education. Studies supporting the diffusion of innovations in the general education literature and the clinical practice literature are reviewed under the preliminary studies section of this dissertation study.

This study focused on the prior conditions of social norms (POS) and the perceived characteristics (Rogers) of SCBTS and their association with the adoption of SCBTS by clinical nurse educators.

Perceived Organizational Support

This dissertation study considered POS to be a norm of the social system of clinical nurse educators. The norms of the social system are a part of Rogers' (2003) prior conditions in the innovation-decision process. Prior conditions act as facilitators or inhibitors of adoption that are in place before the innovation is introduced to the potential adopters. POS directly affects the organizational climate (Dee et al., 2002) and consequently may be associated with the adoption of SCBTS by clinical nurse educators; thus, both literatures (POS and organizational climate) were reviewed for this study.

The clinical practice setting continues to transform based on new information technology and extensive changes in the health care delivery system, indicating the importance of reviewing POS and organizational climate literature. Nurse educators' support for innovation by their organizations may indicate that educators may be more likely to adopt SCBTS; subsequently, POS was included as a variable for this study.

POS theory (Eisenberger et al., 1997; Eisenberger et al., 1986; Rhoades & Eisenberger, 2002; Shore & Shore, 1995) contends that employees form common beliefs concerning how much the organization values their contributions and is concerned for their welfare. Studies of POS have been shown to demonstrate increased commitment to the organization, heightened performance, and reduced absenteeism by employees (Mathieu & Zajac, 1990; Meyer & Allen, 1997; Mowday, Porter, & Steers, 1982).

Rhodes and Eisenberger (2002) conducted a review of the literature of 70 POS studies and determined the antecedents and consequences of POS. The antecedents included fairness, supervisor support, organizational rewards, and job conditions. Consequences included organizational commitment, job satisfaction, job interest and involvement, increased performance, decreased strains from job stressors, desire to remain employed, and diminished withdrawal behavior.

Organizational support for innovation is a critical social norm influencing adoption of new ideas. Organizational support has been well established in the literature in successful, long-term organizational performance (Drucker, 1974; Meyer & Scott,

1983; Pearce & Robinson, 1988). According to Eisenberger, Fasolo, and Davis-LeMastro (1990) innovation and spontaneous problem-solving may be associated with perceived support. The pace of change within organizations, particularly health care, suggests expectations for innovation, and professionals may be encouraged to think creatively and are supported in risk-taking while developing new ideas. POS is likely to be reflected in employee perceptions of and attitudes toward their work environment and may be linked to adoption of SCBTS.

Trends in the POS literature included relationships to the variables of (a) leadership support for new ideas (Carson, Carson, & Pence, 2002); (b) job satisfaction (Chan, 2001; Eisenberger et al., 1997); (c) organizational teamwork (Choi, 2006; Self, Holt, & Schaninger, 2005); (d) organizational commitment (Loi, Hang-yue, & Foley, 2006; O'Driscoll & Randall, 1999; Rhoades & Eisenberger, 2002); (e) ownership in decision-making (Henkin, Davis, & Singleton, 1993); and (f) job performance (Witt & Spitzmuller, 2007). All of the above variables indicate that POS has far-reaching influence and thus may be related to the adoption of SCBTS. A review of the POS literature follows.

Nursing Faculty and Clinical Practice Study

There were no studies found in the clinical nursing education literature per se on the topic of POS and the adoption of SCBTS, although one study was found that addressed POS in nursing faculty compared to clinical nurses. Even though the study was conducted over a decade ago, it brings up important factors that are still present today in considering POS in clinical nursing education. Henkin et al. (1993) assessed POS for innovation among nursing faculty compared to nurses working in hospitals. POS for innovation by faculty ($N = 66$) in a university-based school of nursing was measured and compared to nurses who worked in hospitals. Participants completed the Siegel Scale of Support for Innovation (Siegel, 1985), an established valid and reliable instrument developed to measure respondents' POS within their organizations (Brown, 1985; Henkin et al., 1993; Orpen, 1990; Siegel & Kaemmerer, 1978).

Factors of Siegel's (1985) organizational climate characteristic of innovative organizations were represented in five subscales: (a) ownership (ideas that originate from members), (b) leadership (leaders' support for new ideas), (c) norms for diversity

(tolerance of innovative members), (d) continuous development (constant search for new solutions), and (e) consistency (an organization's regular support of innovative ideas).

Results revealed neutral support for innovation among faculty, with strong endorsements for the ownership dimension of the Siegel Scale of Support for Innovation (Siegel, 1985), indicating the need for members' involvement in developing new ideas within the organization. Relationships between demographic variables and higher POS included age, long-term employment, and advanced credentials. The POS of nursing school faculty were significantly different from the hospital-based nurses who revealed a lower POS. Results suggested that faculty tend toward more positive perceptions of POS than practicing nurses. The hospital-based nurses may have had lower POS as a result of less autonomy, organizational strictures placed on them by the hospital, and high turnover rates among the nurses.

As a result of similarities in the organizational structure and the perceived characteristics of an innovation on the adoption of new ideas in clinical practice and educational settings, the literature from these two disciplines was reviewed. POS is an important variable in individuals' performance in clinical practice and educational work settings and may be associated with the adoption of new ideas in clinical nurse educators.

Clinical Nursing Practice Studies

Several articles addressing POS in nursing practice were found. Burke (2003) found in his study of 393 staff nurses in a restructured hospital setting that POS helped mediate the negative effects of hospital restructuring on staff nurses' job satisfaction. Cameron and Masterson (2000) found that POS was strongly associated with nurses' perceptions of support from their supervisors, having power over their work, and control over organizational decisions affecting their future jobs. Patrick and Laschinger (2006) found in their study of 126 mid-level nurse managers that feelings of empowerment were positively associated with the manager's POS and the combination of empowerment and POS were related to their job satisfaction.

Laschinger, Purdy, Cho, and Almost (2006) found in their study of 202 nurse managers that higher levels of POS were related to increased resistance to job strain and burnout. The researchers found that organizational characteristics most strongly related to POS were rewards for effort, job security, autonomy, and monetary gratification. In

addition, Laschinger et al. found that higher POS was associated with positive employee attitudes, good performance levels, and optimal health outcomes. Perceived organizational support may be associated with the decision to adopt SCBTS by clinical nurse educators based on the importance of POS in workplace settings found in the literature.

General Education Studies

Articles addressing POS in the education literature share similarities to the academic environment in schools of nursing. LaMastro (2000) concluded in her study of elementary and high school teachers that POS was associated with a greater tendency to experience positive moods at work and less tendency to experience negative feelings such as tension and stress at work. Fuller, Hester, Barnett, Frey, and Relyea (2006) found in their study of 325 university employees (staff, administration, and faculty) that POS was directly related to feelings of attachment to the university. Hutchinson (1997) found in his study of 205 university faculty and staff that POS was related to commitment to the university. As demonstrated in the studies from the education literature, nursing can benefit from these studies on the wide-ranging effects of POS that may contribute to the adoption of SCBTS.

Dee et al. (2002) supported the notion of ownership in their study of support for innovation in site-based managed schools. Also using the Siegel Scale of Support for Innovation (Siegel, 1985) instrument, the researchers concluded that positive associations were found between POS and communication openness, shared decision-making, work autonomy, and formal organizational structures that reduce confusion associated with new ideas. Organizational innovation and empowerment of its members appear to be associated in the context of environments that share authority and redistribute responsibilities, thus allowing for innovation as a result of shared ownership of new programs and policies within schools (Conger & Kanungo, 1988; O'Neil, 1990; Spreitzer, 1995). The social norm of POS may empower nurse educators to consider the adoption of new teaching strategies.

Summary of POS

The literature review points to the importance of POS in the social norms of employees who are more likely to be satisfied with their jobs, have better affective moods, are committed to their employers, and are more likely to be innovative on behalf of the organization. For clinical nurse educators, POS in their academic institutions may facilitate open communication within schools, creating an organizational climate that may be linked to the consideration of new teaching and learning strategies. Consequently, educators may be more willing to adopt SCBTS.

Organizational Climate

Organizational climate refers to members' perceptions of the current patterns of interaction in their organizations or the personality of a setting or environment (Moos, 1994). Organizational climate is differentiated from organizational culture, which is defined by the deeply held values, assumptions, and beliefs of its members. Organizational culture is considered to be embedded and enduring, whereas climate is variable and malleable (Peterson & Spencer, 1990). The organizational climate is directly influenced by the level of POS within an organization (Dee, 1999; Eisenberger et al., 1997; Gregory et al., 2007; Lubbert, 1995; Siegel, 1985; Siegel & Kaemmerer, 1978). The climate of their academic institutions may be related to nurse educators' willingness to engage in change-related activities such as the adoption of SCBTS; therefore, the literature of organizational climate was reviewed.

Organizational climate may be conceptualized as a number of measurable organizational properties that are perceived by its members and vary among types of organizations (Litwin & Stringer, 1968). Organizations may differ in terms of dimensions of climate. Siegel (1985) identified five dimensions of innovative organizational climates as previously mentioned: leadership, ownership, norms for diversity, continuous development, and consistency.

For the purposes of this study, three of Siegel's (1985) five organizational climate dimensions, which are characteristics of innovative organizations, were used to measure POS in the sample: leadership, ownership, and norms for diversity. Siegel's dimensions parallel Roger's (2003) concepts in his diffusion of innovations model, thus forming an ideal match for measuring the variables.

Siegel's (1985) leadership dimension, which is manifested in the organizational leaders' support for new ideas, parallels Rogers' (2003) champions, who are individuals supporting innovations within the organization, are adept at interacting with people, and are skillful at persuasion and negotiation.

Siegel's (1985) ownership dimension, which finds that ideas originate from members who are involved in the decision-making process, parallels Rogers' (2003) idea of less centralized organizations, where the power and control for decision-making about new ideas are shared between members and leadership who provide POS. Siegel's dimension of norms for diversity, which is manifested in the members' tolerance for members with new and different ideas, parallels Rogers' idea of heterophily, where diverse members come together to formulate innovations.

School Climate

School climate has been identified as possessing specific elements that have been established by educators and researchers over the last three decades (Cohen, 2007). Climate reflects the quality and character of school life, reflecting norms, goals, values, interpersonal relationships, teaching, learning, leadership practices, and organizational structures. School climate evaluations can be used as a springboard for change. Understanding school climate can set an opportunity in motion for making improvements based on change such as the adoption of new ideas or programs in clinical nursing education.

Open communications in a school can facilitate the transactions, channeling, and diffusion of innovations (Rogers, 2003). Organizational climates with open communication and high levels of work autonomy have been found to be associated with POS (Dee, 1999). In academic environments, the climate of communication openness may be a modifier in faculty's consideration of curricula changes (Dee et al., 2002; Henkin et al., 1993; Siegel & Kaemmerer, 1978).

Innovations developed by one educator may be disseminated to others who then share their knowledge and experiences (Whitney, 1996). Increased communication flow among faculty improves innovation performance (Damanpour, 1991). A climate of open communication within an organization functions as a feedback mechanism when it provides individuals with timely information about the performance of innovations

(Brown & Eisenhardt, 1997). Schools of nursing that have a positive organizational climate influenced by POS, with open communication channels, may foster creative functioning of its members influencing change activity such as the adoption of SCBTS.

Nursing Faculty Studies

There were no studies found addressing organizational climate specifically among clinical nurse educators; however, two studies were found measuring school climate among nursing faculty (it was not stated whether the faculty taught in the clinical setting in either study). Lubbert (1995) demonstrated the important relationship between dimensions of organizational structure (e.g., centralization [with high managerial structure] and formalization [with close supervision and many rules]) and the climate in schools of nursing. Data were collected from 111 full-time faculty in baccalaureate and associate degree schools of nursing, and findings indicated a significant relationship between organizational structure and climate. There was a positive relationship between decentralization (less centralized managerial organizational structure) and climate. A negative relationship was found between more formalization (close supervision by superiors) and job satisfaction. This study supports the notion of the importance of the leadership structure within schools of nursing and the organizational climate. Clinical educators with POS emanating from their school's leadership may work in a climate that is open to change, and educators may be encouraged to adopt new teaching strategies.

Doughty et al. (2002) assessed the perception of nursing faculty ($N = 31$) regarding their work environment based on Moos' (1994) work environment scale, which showed scores to be congruent in 7 of 10 social climate subscales. The subscales that were highly associated with a positive climate included involvement, co-worker cohesion, supervisor support, autonomy, task orientation, clarity, and innovation. This study supports the notion of faculty's POS in creating a positive climate within the academic work environment and clinical nurse educators feeling supported to adopt new teaching strategies.

General Education Studies

Studies in the education literature revealed a positive relationship between social climate and the implementation of intervention programs in schools. Gregory et al. (2007) in their study of multiple dimensions of school climate on the level and rate of

change in implementation of a violence prevention intervention program across three school years found that POS predicted a higher average level of implementation. Parcel et al. (2003) found in their study of 76 elementary schools that school climate was associated with the continued implementation of a health promotion program. Principals and teachers with open communication channels and teachers who reported high POS were more likely to continue to use the intervention program. This study supports the concept of open communication channels and POS among faculty in sustaining new intervention programs in schools. Nurse educators who have open communication and POS in their schools of nursing may be more likely to be open to new ideas and to sustain them over time.

Workplace Studies

In workplace studies of organizational climate, members' perceptions of organizational climate were largely influenced by attitudes and behaviors in work environments. A study by Eisenberger et al. (1990) of six occupational groups found a positive association between members' POS and higher levels of conscientious work ethics, involvement, and innovation. Jansen and Chandler (1994), in their study of organizational climate and hospital employees' attitudes and behaviors, found that employees with POS reported less role conflict, higher involvement in the work environment, and satisfaction with the organization.

Summary of Organizational Climate

In summary, organizational climate is greatly influenced by POS and shapes an organization's social environment. Through communication channels, climate plays a significant role in employees' involvement in job satisfaction, school involvement, and innovation and can be used as a springboard for change. Siegel's (1985) dimensions of leadership, ownership, and norms for diversity parallel Rogers' (2003) concepts in the diffusion of innovations model and were used as independent variables in this study on the adoption of SCBTS. Interventions at the organizational level can be made in response to organizational climate regarding the adoption of new ideas. Nurse educators who work in a positive school climate may be more likely to adopt SCBTS. Sociocultural theory, the underlying theory for SCBTS, may be better suited in preparing nurse graduates who

must learn from many contexts in social and cultural variables within the organizational climate about how to work safely and competently in today's health care system.

Sociocultural Learning Theory

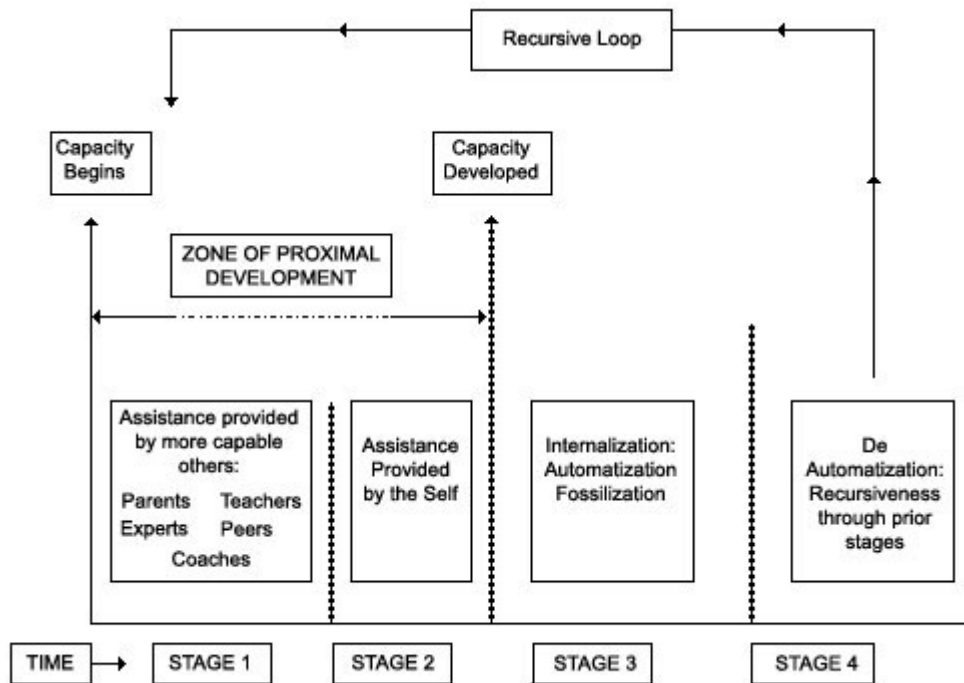
The foundation of sociocultural learning theory, also known as SCT, suggests that social interaction plays a fundamental role in the development of cognition. According to Wertsch (1991), the sociocultural approach asserts that human cognitive functioning is innately positioned in social, cultural, institutional, and historical contexts. Sociocultural theory evolved in response to societal changes that began with the demands of business and industry using behaviorism (as measured by responses to stimuli) and resulted in a factory model for schools (Marsick, 1988; Toffler, 1990). Previous teaching methods were brought into question during the 1980s when the areas of psychology and business were making discoveries about knowledge construction. New quests about teaching and learning brought societal demands to explore principles of mentoring, critical reflection, dialogue, collaboration, and continuous self-directed learning as was seen in the educational reform efforts in many disciplines (Bonk & Kim, 1998).

Vygotsky, a Russian theorist and social psychologist, greatly impacted constructivist learning theories emphasizing the importance of social and individual processes in learning (John-Steiner & Mahn, 1996; Moll, 2004). The impact of Vygotsky's ideas has grown substantially, particularly after the translation and English publication of a selection of his writings in "Mind in Society" in 1978. Vygotsky's six key concepts of SCT (1978) included ZPD, internalization, scaffolding, intersubjectivity, cognitive apprenticeship, and assisted learning.

The ZPD is a major concept in Vygotsky's work and represents the amount of learning that is possible by a learner given the proper instructional conditions. The zone is defined as the distance between what one can achieve alone and what one can achieve with help (Vygotsky, 1978). This idea emphasized that learners develop higher cognitive levels when the gaps in their thinking and problem solving are supported by peers and/or more capable others. The support for learning in the zone is called scaffolding. It is critical for the individual to actively participate in the learning process in order for internalization of knowledge to occur.

Learners move through four stages in the ZPD as seen in Figure 2 (Gallimore & Tharp, 1990). Stage one involves assisted performance by more capable others such as teachers, experts, peers, or coaches. Stage two involves performance assisted by the self, for example through self-directed speech, and a task performed or verbalized without the assistance of others. In stage three, the learner's performance is developed, automatized, and fossilized. Vygotsky (1978) describes this as the stage where the learner no longer needs the assistance of others and the performance is developed or fixed. The fourth stage involves deautomatization of performance leading to recursion through the ZPD. This is the lifelong learning stage, where learners realize that they have forgotten what was once learned and must seek the assistance of others so that self-regulated components of performance once again resemble commonplace shared functioning between the learners and the more capable others.

Figure 2. Genesis of a performance capacity: Progression through the ZPD and beyond.



From Gallimore, R. & Tharp, R. (1990). Teaching mind in society. Teaching, schooling, and literate discourse. In L. C. Moll (Ed.). *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (p. 185). New York: Cambridge University Press.

Educators can facilitate active student learning potential through social interaction using techniques such as modeling and feedback to assist the learner until the knowledge is internalized (Gallimore & Tharp, 1990). Students who move through the zone realize they have reached their potential and progress to higher levels of learning, thus creating the necessary skill and motivation to become lifelong learners. Research by Gallimore and Tharp on long-term professional development training for teachers demonstrated the use of sociocultural teaching techniques to help practicing teachers reflectively analyze their teaching practices and progress. A second example of how social and cultural environments influence students' thinking and learning can be seen in a study based on Vygotsky's SCT (Miller, 1995). Miller's four-year ethnographic study examined classroom context for open-forum English literature discussion. Teachers in the study encouraged students to think critically in response to the sociocultural context using teacher-scaffold discussion and reflective strategies. One year later, students were able to internalize what they had learned, but the knowledge was only adapted to other classes when the social contexts were valued. This study reveals how the sociocultural environment can significantly influence students' learning and thinking.

Internalization is the process whereby learners' social interaction generates ZPDs to foster skillfulness and capacities that originally only are realized with support or collaboration with others but eventually become internalized as a process that is self-regulated (Gallimore & Tharp, 1990). Scaffolding is a teaching method that provides the learner with guidance to complete a task or to solve a problem that would not have been successfully completed without assistance. Students make connections between old and new information in a social, active learning environment. The educator eventually *fades out*, or gradually withdraws the mediations or educational tools, as the student begins to internalize the information. Gaffney and Anderson's study (1991) described two-tiered scaffolding in adults whereby educators were supported by professional development avenues in their teaching techniques, which in turn aided in the learning of their students.

Intersubjectivity is the idea that learning can take place as a result of shared meaning or understanding of the way learners think about the world within their social contexts. These common values help learners negotiate meaning and build new

knowledge (Gallimore & Tharp, 1990). Cognitive apprenticeship uses real-world learning experiences that are shared between the mentor and the apprentice (or learner), which utilizes both scaffolding and intersubjectivity. These relationships exist between educators and students in addition to expert and novice faculty and allow learners to move quickly into the practicing community. Assisted learning takes place when activities and forms of assistance between educators and students result in co-construction of new meanings and insights (Gallimore & Tharp, 1990).

Sociocultural Theory and Adult Learning

Sociocultural theory has been used and researched to a great extent in the area of childhood developmental learning in classrooms (e.g., Palinscar, 1998; Rogoff & Chavajay, 1995). Researchers have applied Vygotsky's (1978) theory to such childhood development contexts as (a) the consequences of SCT used in education on childhood development (Cole, 2005; John-Steiner & Mahn, 1996); (b) exploring sociocultural perspectives on race, culture, and learning (Nasir & Hand, 2006); (c) student motivation and the use of SCT (Walker, Pressick-Kilborn, Arnold, & Sainsbury, 2004); (d) the use of SCT and developing technology-based mathematics curricula (Harvey & Charnitski, 1998); (e) the use of SCT as a self-regulation model describing the interaction of learning goals with well-being goals (Boekarts & Corono, 2005); (f) guided participation and sociocultural learning and language disorders (Mastergeorge, 2001); and (g) using SCT to guide curricula for social identity in speech pathology (Hagstrom & Wertsch, 2004).

Neo-Vygotskian researchers have begun to look at the application of SCT in adults (Alfred, 2002; Billett, 2000; Daley, 2001) as the relevance of SCT to formal professional and adult education is becoming recognized. Although most of the research for SCT has been conducted in the area of childhood development, many activities undertaken by children are similar to those encountered by adults who are learning in professional settings. Sociocultural theory may be helpful in understanding complex interactions associated with learning in the clinical and professional settings (Spouse, 2001). Vygotsky's SCT (Vygotsky & Luria, 1930) is concerned with the social origins of human development, which can help to shed light on social and cultural interactions providing a basis for successful adult learning in clinical settings. The influence of the ideas of Vygotsky (1978) and his scholar-followers (Cole, 2005; John-Steiner & Mahn,

1996; Lave & Wenger, 1991; Rogoff & Chavajay, 1995; Tharp & Gallimore, 1988; Wertsch, 1991) has impacted the field of educational psychology, thus renewing recent interest in the contextual nature of learning. Human actions and experiences cannot be separated from the context in which they occur; therefore, the context becomes a central issue in sociocultural research (Walker et al., 2004). Context is a particularly major factor in the understanding of adult learning for the reason that adults encounter significant social phenomenon including learning based in individual, cultural, social, institutional, and historical settings (Alfred, 2002; Peters, 2000).

Studies of Sociocultural Theory and Adult Learning

Studies supporting SCT in adults concur that context contributes to the development of learning in adults. Research from the field of nursing education, medical education, and workplace education have addressed the impact of SCT on adult learning; therefore, exemplar studies in the past decade from these fields are reviewed. These studies point to the importance of SCT in partnering for learning in the workplace setting (Spouse, 2001), the use of teamwork and contextual collaboration (Bleakley, 2006; Boreham & Morgan, 2004; Teunissen et al., 2007), the use of SCT in continuing professional education and the context of the professional practice setting (Daley, 2001), and resolving workplace tasks based on SCT and guided learning (Billett, 2000).

In the field of nursing education, Spouse (2001) found in her interpretive study of eight nursing students that mentorship using the SCT concepts of ZPDs offered an effective means of understanding and implementing an educational partnership with workplace learning. In medical education, Bleakley (2006) found in his literature review of learning theories informing medical education that SCT offered the best fit for workplace learning through teamwork, thus optimizing learning through contextual collaboration. The learning process based on SCT in medical education was further supported by Teunissen et al. (2007) in their qualitative study of 51 medical residents, concluding that work-related contextual activities are foundational in residents' learning in the clinical setting.

In the field of workplace education, Daley (2001), in her interpretive study of 80 professionals including social workers, lawyers, adult educators, and nurses, found that professionals make meaning by moving back and forth between continuing professional

education programs and the contexts of their professional practice. Nurses in the study linked client needs with new information based on the SCT approach used in their continuing professional education. Billett's (2000) interpretive study of Rogoff and Chavajay's (1995) guided learning strategies in five workplace settings ($N = 41$) found a correlation between the frequency of guided learning interactions and their efficacy in resolving novel workplace tasks, and therefore learning. Guided learning strategies encompass SCT in that a more experienced co-worker (mentor) used techniques and strategies to guide and monitor the development of knowledge in those who were less skillful. It is the responsibility of the learner to engage in thinking and acting that is required for learning. Boreham and Morgan (2004), in their three-year empirical study of organizational learning in a large industrial complex ($N = 850$), found that learning is perceived as being embedded in social and cultural contexts, whereby the employees adopted the common object of improving their collective performance through collaboration of relational practices, tools, and dialogue. An organization wishing to learn collectively must bring about the kind of cultural change, based on SCT, implied by the adoption of practices described above.

Socioculturally-based teaching strategies for adults. Sociocultural theory is currently being used in studies of adult populations, as described previously. Bonk and Kim (1998) developed a list of ten SCBTS for adults that are based on the combination of the teaching/learning constructs of assisted learning (Gallimore & Tharp, 1990) (co-construction of new learning between the teachers and learners) and cognitive apprenticeship (Collins, Brown, & Holum, 1991) (real-world experiences shared between apprentice and mentor). These neo-Vygotskian scholars have greatly impacted educational research; thus, Bonk and Kim have applied the constructs from their teaching/learning models to that of adult learning. These strategies are very applicable to the teaching/learning process in clinical nursing education because adult nursing students learn in a variety of ways from a multitude of social and cultural contexts (Peters, 2000; Sanders & Welk, 2005). Bonk and Kim's SCBTS have been operationalized for this study with the terms shown in Table 1.

Table 1

Socioculturally-based Teaching Strategies for Adults

Term	Description
Modeling	To illustrate performance standards and verbalize internal processes
Coaching	To observe and supervise students in guiding them toward expert performance
Scaffolding and fading	To support what learners cannot yet do and gradually remove that support as competence is displayed
Questioning	To request verbal responses from learners by supporting them with mental functions they cannot produce alone
Articulation	To encourage verbal or written expression of learners' problem-solving process
Exploration	To push student examination and application of independent problem-solving skills
Reflection	To foster student problem-solving processes through comparison of learners' practice with previous practice or with the practice of expert practitioners or other learners (e.g., through performance replays)
Cognitive task structuring	To explain and organize a task within the learners' ZPD
Managing instruction	To assist learning through performance feedback and positive reinforcement
Direct instruction	To assist learning through instructor-led lessons, with practice and feedback to provide clarity, needed content, and missing information

Bonk and Kim (1998) created an insightful list of SCBTS for adults that may be adopted by clinical nurse educators. The list is not exhaustive but one which encompasses some of the many teaching strategies that are based on SCT. Nurse educators who use SCT may do so on a continuum; thus, some may use it as a supplement to traditional

behaviorist approaches, and some may use SCT as the basis for all of their teaching strategies.

Nurse educators who use SCT embrace constructivism, which arose from Vygotsky's (1978) theory, whereby learning experiences are designed to be active and learners are *doing*, reflecting on, and evaluating their learning experiences while building on previous learning experiences to construct new knowledge and meanings (Peters, 2000; Yeager, 1991). The educator does not take center stage but guides and supplies opportunities for learners to examine and question the feasibility of their existing understanding and comprehensions (Tobin & Tippins, 1993). The SCT approach is more conducive to the underpinnings of contemporary pedagogy in clinical nursing where today's nurse graduates must think about each complex practice situation to deliver individualistic, competent, holistic care (Peters, 2000; Sanders & Welk, 2005).

According to Tharp and Gallimore (1991), education emphasizes assisting learners through instructional conversation. Instructional conversation occurs between educators and learners exploring ideas that have meaning and relevance to learners, allowing an exchange of extended discussions (Goldenberg, 1991). Instructional conversation assists the learner through a dialogue between educators and learners in which the educators carefully take note to grasp the learners' communicative intent and modifies the dialogue to meet the emerging understanding of the learners (Tharp & Gallimore, 1991). The assistance in the ZPD stimulates the learning potentials of learners of all ages. Assisted performance through instructional conversation defines what a learner can do with help, with the support of the environment, of others, and of the self (Dunphy & Dunphy, 2003).

Integrative Review of SCBTS in Clinical Nursing Education

An integrative review of the clinical nursing education literature is necessary to provide a foundation of what SCBTS are being used by clinical educators and their usefulness on student learning. The SCBTS set forth by Bonk and Kim (1998) were used as operational definitions in this study and revealed some important studies on the success of some of the strategies. The inclusion criteria for the literature review included studies (see Table 2) of (a) nursing programs with clinical instructors using Bonk and Kim's (1998) SCBTS, (b) international studies, (c) the time period between 1997–2008,

(d) primary research article in peer reviewed journal, and (e) publication in the English language.

Table 2

Inclusion Criteria and Rationale for Integrative Review

Criteria	Rationale
Nursing programs with clinical instructors using Bonk and Kim's (1998) SCBTS	There is a need to determine what SCBTS are being used as a descriptive foundation to the study.
International studies	Studies from around the world can provide multicultural insights into clinical teaching methods.
Time period between 1997–2008	National nursing organizations have continued to call for nursing education reform in the last decade.
Primary research in a peer-reviewed journal	Peer reviewed published articles are more rigorous.
Published in the English language	The English language is the most universal language used internationally in published clinical nursing education research.

The literature review of Bonk and Kim's (1998) SCBTS for adults in clinical nursing education is organized below into a presentation of each of the strategies. Some strategies are presented together in one category because the content overlaps too significantly in the literature to present them separately, although they are mutually exclusive strategies (e.g., scaffolding and coaching, and DI and cognitive task structuring are presented together).

Modeling

Modeling in SCT is used to illustrate performance standards and to verbalize internal processes (Bonk & Kim, 1998). Modeling offers behavior for imitation and

assists by giving the learner information and a remembered image that can serve as a performance standard (Tharp & Gallimore, 1991). A model must be an expert in order that the proper image is internalized by the learner. The presence of reinforcement opportunities for behavior that is modeled influences learning within the ZPD. Modeling is indispensable to assisted performance, particularly when teaching psychomotor skills in the clinical setting. The contextual assistance of the instructor, environment, more capable peers, and the self are necessarily intertwined, occurring in combination and sometimes simultaneously (Dunphy & Dunphy, 2003).

Modeling in the international clinical nursing education literature has been well documented over the past 27 years, as seen in studies identifying the importance of role modeling as evidenced in students' and faculty's perceptions of effective clinical instructor competencies (Beitz & Wieland, 2005; Benor & Levyof, 1997; Brown, 1985; Donaldson & Carter, 2005; Gignac-Caille & Oermann, 2001; Hsu, 2006; Johnsen et al., 2002; Kotzabassaki et al., 1997; Morgan & Knox, 1987; Nahas et al., 1999; Nahas & Yam, 2001; Nehring, 1990). Clinical nurse educators' role modeling helps to create a social climate conducive to learning that is vital to the students' reaching their learning potential within their ZPDs. Role modeling is considered to be one of many characteristics of effective clinical teaching.

On the other hand, effective teaching is multidimensional, and no single criterion is intrinsically sufficient (Marsh & Roche, 1997). The impact of the educator characteristic of role modeling may not be as important as was once thought (Benor & Levyof, 1997; Cowman, 1998). The context of the teaching and learning environment contains many variables and various experiences from learners' psychological constructs based on their past experiences.

The majority of the role modeling studies informs the profession of the importance of the educator in the clinical setting (Beitz & Wieland, 2005; Benor & Levyof, 1997; Brown, 1985; Donaldson & Carter, 2005; Gignac-Caille & Oermann, 2001; Hsu, 2006; Johnsen et al., 2002; Kotzabassaki et al., 1997; Morgan & Knox, 1987; Nahas et al., 1999; Nahas & Yam, 2001; Nehring, 1990); however, contextual learning is rarely taken into account and is missing from the clinical nursing education literature (Marsh & Roche, 1997; Phillips, 2007a). It is important to include context in the clinical

nursing education studies by including each of Bonk and Kim's (1998) SCBTS in addition to POS as variables on the exploration of clinical educators' adoption of SCBTS.

Scaffolding and Coaching

Scaffolding and coaching were considered together because coaching is considered to be a scaffolding strategy, although they are mutually exclusive strategies. Scaffolding consists of creating supported situations in which learners extend their current skills and knowledge within their ZPDs. Through the use of scaffolding strategies such as coaching, learners make connections between old and new information in a social, active environment. Scaffolding stimulates student interest, simplifies tasks so they are meaningful, and motivates students to pursue practice goals (Peer & McClendon, 2002).

In contrast to mentoring, which involves both personal and professional life guides (Fenwick, 2003; Harris, 2007; Sekerka & Chao, 2003), coaching is associated with the challenge of learning a specific skill. In clinical nursing education, coaching begins with observing learners while they perform a task for the purposes of developing an understanding of the procedures required to carry out that task (Taylor & Care, 1999). Coaching guides the learner to exhibit improved clinical skills resulting in improved communication between the learner and the coach (Carter, 1992; Mott, 1992; Popper, 1990). The learner listens to the coach who provides assistance at the most critical level, which is just beyond what the learner can accomplish without help (within the ZPD). The coaching process may include techniques such as additional modeling, feedback, and prompting, thus intending to bring the learner closer to that of the coach's expertise.

As the learner becomes more skilled through repetition in the coaching process, the coach fades out (using the scaffolding and fading approach) until, ideally, the learner is performing the skill appropriately (Sanders & Welk, 2005). The context of the learning environment is imperative to learning skills that need to be situated within the learners' real-world experiences (Gallimore & Tharp, 1990). In nursing, this indicates that learning skills in the clinical setting, with the help of a coach assisting the learners within their individual ZPDs, is the optimal learning situation.

Rossignol (2000) found that clinical instructors who *coached for cognition* carefully monitored learners' cognitive levels ($N = 74$) in discourse during clinical

conferences to encourage higher levels in thinking and extension of student thought. Cope, Cuthbertson, and Stoddart (2000), in their qualitative study of situated learning, described learners ($N = 30$) who were coached by nurse educators who modeled good practice and provided appropriate but progressively withdrawn student support. Scaffolding allowed the learners to accomplish more than they would have been able to achieve without help. As the competence of the learner increased, the support was withdrawn so that the learning transferred entirely over to the learner, thus providing movement toward independent competence in areas where it initially was needed.

Spouse's (2001) qualitative research about bridging theory and practice ($N = 8$) contended that students who were coached using strategies such as continuous performance evaluation and collaborative educational experiences led to the faster development of professional abilities more safely than if learners were left alone to *muddle through*. Hsu (2007) stated that use of faculty coaching techniques and interaction between students and faculty were effective characteristics of successful clinical conferences ($N = 10$).

In summary of scaffolding and coaching, the clinical nursing education literature reveals that learners showed higher levels of thinking (Rossignol, 2000), achieved greater skills without help, thus moving toward independent competence (Cope et al., 2000), developed professional abilities more quickly (Spouse, 2001), and helped to make clinical conferences more effective (Hsu, 2007). There were no studies concerning the limitations of using scaffolding and coaching, which would provide insight into areas of improvement in teaching and learning.

Questioning

Questioning is used by the educator to request verbal responses from learners by supporting them with mental functions they cannot produce alone (Bonk & Kim, 1998). This interaction assists the learner further by giving information about the learner's developing understanding, thus producing a mental operation that the learner cannot or would not produce alone (Tharp & Gallimore, 1991). Questioning is considered to be a linguistic means of assistance, calling specifically for an active linguistic and cognitive response, provoking the learner's learning potential within the ZPD.

In clinical nursing education, questioning is an essential tool for the reason that questions require the use of language, thus assisting the learner in thinking. There are two kinds of questions, those that assess and those that assist (Dunphy & Dunphy, 2003). A skillful clinical educator will incorporate assessment questions whenever information is needed about a learner's knowledge or progress. Assistance is then provided by the educator through questioning in order to direct the learning within the learner's ZPD. Cognitive dissonance (attempts to reduce the discomfort of conflicting thoughts by performing actions that are opposite to one's beliefs) is provoked by the educator through questioning the learner in order to create activity in the ZPD for new learning (Welk, 2006).

Questioning in clinical nursing education is primarily concerned with providing specific assistance by stimulating learners' thinking so that the educator can assist the learners in connecting classroom theory to clinical practice (Hsu, 2007; Phillips & Duke, 2001; Profetto-McGrath, Smith, Day, & Yonge, 2004; Sanders & Welk, 2005; Sellappah et al., 1998). Learners' ability to transfer classroom theory to clinical practice is often not routine, and questioning strategies assist learners in the development of thinking skills and decision-making abilities in the clinical setting.

Low-level questions address knowledge, comprehension, and application, whereas *high-level* questions address analysis, synthesis, and evaluation as classified by Bloom (1956) and more recently as revised by Anderson and Krathwohl (2001). Whereas low-level questions are appropriate for beginning learners, higher-level questions are needed for the development of thinking skills and decision-making abilities as learners advance through the nursing curricula. The studies described above reveal that regardless of the learner's position in the nursing program low-level questions were the most frequently used by clinical educators.

In summary, the findings indicate that many clinical educators have not been taught the skill of questioning and how to use the strategy effectively (Hsu, 2007; Phillips & Duke, 2001; Profetto-McGrath et al., 2004; Sanders & Welk, 2005; Sellappah et al., 1998). The studies reinforce the need (a) to teach educators how to develop and articulate questions of various levels and types, (b) to teach various techniques related to questioning, (c) to use modeling to teach students to ask higher-level questions, and (d) to

create a supportive social climate where there is a positive openness to questioning (Profetto-McGrath et al., 2004). The clinical education studies regarding questioning inform the profession of the importance of assisting learners in the development of clinical/critical thinking, decision-making, and problem-solving and point to the need for professional development for clinical educators in learning effective questioning strategies.

Articulation

Articulation is often found with research about reflection (Fonteyn & Cahill, 1998; Murphy, 2004; A. Smith, 1998) because they frequently go hand-in-hand in the learning process. Articulation is the means by which students explain their learning based on reflection of their experiences thereby generating new meaning based on existing memory structures (Murphy, 2004). In helping to apply nursing theory to practice, articulation may be considered the explication of a person's thoughts either verbally or in writing (Murphy, 2004). Questioning strategies to elicit verbal responses to show application of thinking and problem-solving has been described previously (Hsu, 2007; Phillips & Duke, 2001; Profetto-McGrath et al., 2004; Sanders & Welk, 2005; Sellappah et al., 1998).

Using written articulation in the form of journal writing has been found to have a positive effect on learning and problem-solving in the clinical setting (Charbon & Lee-Wilkerson, 2006; Daroszewski, Kinser, & Lloyd, 2004; Jensen & Joy, 2005; Plack, Driscoll, Blissett, McKenna, & Plack, 2004; Ritchie, 2003). Some learners feel more comfortable expressing themselves in writing, whereas others prefer verbally discussing their learning in the post-conference setting (Letizia, 1998). Using both written and verbal articulation provides expression for both introverted and extroverted learners.

Fonteyn and Cahill (1998), in their qualitative study of baccalaureate nursing students ($N = 9$), found that personal clinical logs allowed students to become more active learners, to manage their own thinking, and to improve their metacognition. Ritchie (2003) found in her qualitative study ($N = 9$) that learners' journal writing provided a means to recognize affective outcomes of learning, such as increasing self-awareness and professional growth. A dialogue between faculty and learners provided opportunities for learners' personal and professional development outside of the fast-

paced acute care clinical setting. Jensen and Joy (2005) found in their qualitative study of nursing students ($N = 20$) who kept reflective journals that higher levels of reflection were evident based on Mezirow's (1981) reflective model. Daroszewski et al. (2004), in their study of online, directed journaling ($N = 6$), found that journaling enhanced clinical learning in the areas of discussion, mentoring, and socialization. A. Smith (1998) found in her qualitative study that journal writing of critical (meaningful) clinical incidents by nursing students ($N = 25$) caused increased levels of thinking.

The nursing education literature revealed only one study about how to evaluate reflection in nursing students' journals (Jensen & Joy, 2005) using Mezirow's (1981) model of the seven levels of reflection. It is important for students to receive feedback and reinforcement to learn how to evaluate and assist their levels of performance in the clinical setting.

In summation of the strategy of articulation, evidence abounds as to the importance of assisting students' learning within their ZPDs through the solicitation of verbal and/or written articulations. Clinical post-conferences (Letizia, 1998) and reflective journaling (Daroszewski et al., 2004; Fonteyn & Cahill, 1998; Jensen & Joy, 2005; Murphy 2004; Ritchie, 2003) are two areas in which clinical nursing research has been conducted. Articulation has assisted students in becoming more active learners (Fonteyn & Cahill, 1998), increasing self-awareness and professional growth (Ritchie, 2003), increasing higher levels of reflection (Jensen & Joy, 2005), and enhancing discussion, mentoring, and socialization (Daroszewski et al., 2004).

Studies of the effectiveness in using journal writing as a teaching strategy to articulate learning are evident in the nursing education literature; however, only one study was found regarding evaluation of the journals to determine whether higher-level thinking was occurring among students (Jensen & Joy, 2005). Clearly, there is a paucity of theoretical frameworks to evaluate articulation. There also is a need to explore the evaluation of students' written articulation in order to provide a consensus about evaluating student learning and application of theory to practice.

Exploration and Application of Problem-solving Skills

Exploration is aimed at encouraging autonomy in the learner, carrying out problem-solving processes, and defining or formulating problems to be solved independently (Bonk & Kim, 1998; Collins et al., 1991; Taylor & Care, 1999). Teaching exploration involves assisting the learner in setting general goals then encouraging a focus on sub-goals of interest. Learners may revise general goals as they develop more interesting topics to pursue (Collins et al., 1991). The ability to set long-term goals has been correlated with higher performance outcomes (Burkhalter, Farmer-Dougan, & Nordstrom, 1997; Frink & Ferris, 1998). Goal-setting has implications for clinical nursing education in preparing nurse graduates to work more competently in complex health care systems.

Two research studies on the topics of exploration and application of problem-solving skills in the past decade were found in the clinical nursing education literature. Jackson and Sullivan (1999), in their qualitative study of integrating the creative arts into a nursing program ($N = 20$), reported on the use of educators' facilitation of student exploration of the arts and humanities. Students gained insights through problem-solving assessment assignments, which assisted them in developing an understanding of key course concepts such as caring, empathy, pain, health, and illness. Wang, Lo, and Ku (2004), in their study of problem-solving strategies to promote clinical problem-solving abilities ($N = 114$), found that educators who taught problem-solving strategies to enhance exploration resulted in learners who scored significantly higher on clinical problem-solving abilities. Learners were encouraged to probe deeply, think rigorously, and develop lifelong learning skills, thus understanding and retaining information based on relationships to preexisting information.

A topic related to exploration and problem-solving is that of the development of creative thinking in clinical nursing education. Exploration through creative thinking enhances problem-solving in nursing practice (Ku, Lo, Wang, Hsieh, & Chen, 2002). Creative problem-solving is "thinking directed toward achievement of a goal by means of a novel and appropriate idea or product" (LeStorti et al., 1999, p. 62). Kalischuk and Thorpe (2002) found in their qualitative study of 12 nursing students three themes regarding how creativity can be achieved more readily: when there was a sense of

balance between learners' personal and professional lives, when there was a sense of self-esteem present in the learners, and when there was time for reflection. Nurse educators can enhance creativity in their students to develop their problem-solving abilities. Creative problem-solving challenges nurses to augment the traditional nursing process skills with techniques such as creative thinking, thus facing emerging problems of today's complex health care system (LeStorti et al., 1999).

In summary of the teaching strategy of exploration and application of problem-solving skills, the clinical nursing education literature points to the importance of integrating the creative arts and humanities into teaching about problem-solving (Jackson & Sullivan, 1999), teaching problem-solving to encourage probing deeply and developing lifelong learning (Wang et al., 2004), and teaching creative thinking to solve problems that emerge from today's complex health care system (Kalischuk & Thorpe, 2002). It is clear that over the past decade encouraging exploration so that learners can problem-solve independently has begun to become part of the nursing education curriculum, although the research is sparse. More studies of teaching exploration and problem-solving are needed to help establish evidence of their effectiveness in addressing the multifaceted problems that nursing students and graduates must face.

Reflection

Reflective thinking was first described by Dewey (1933) and then by Habermas (1987) who defined reflection as careful consideration and examination of issues of concern related to an experience. Reflection in clinical nursing education is characterized by learning experiences that encourage learners to compare their current practice with previous practice or with the practice of expert practitioners or other learners (Taylor & Care, 1999). In SCT, knowledge is considered to be socially constructed in part through reflection on one's own ideas or other learners' ideas (Welk, 2006). Knowledge from one practice situation can be built on, changed, and modified accordingly through evaluation and reflection, which is encouraged in SCT. Reflection and evaluation of knowledge application enhances theoretical knowledge and practical knowledge alike (Peters, 2000). According to Wilkinson's "Dictionary of Nursing" (1996), reflection is an active process whereby professionals can gain understanding of how historical, social, cultural, cognitive, and personal experiences contribute to professional knowledge and practice.

In the review of the clinical nursing education literature, it is clear that currently no single definition of the concept of reflection exists (Honey, Waterworth, Baker, & Lenzie-Smith, 2006) nor is any one framework used to study it (A. Smith, 1998). These limitations are problematic in that the conclusions may not be comparable, thus limiting the strength of the studies and the impact on reflective learning research.

Two categories of studies were found regarding reflection in clinical nursing education: those professing that reflection helps students in applying classroom theory to the clinical practice setting (Kautz et al., 2005; Liimatainen et al., 2001; Murphy, 2004; A. Smith, 1998) and those that do not (Carroll et al., 2002; Honey et al., 2006; Lowe & Kerr, 1998; Nicholl & Higgins, 2004).

Among the earlier studies supporting the application of classroom theory to the clinical setting, reflection was found to help students analyze both personal and professional knowledge, integrate theory and practice, and develop clinical competence (Burrows, 1995). Reflection has been shown to enhance learning of nursing clinical knowledge as seen in reduced nursing error rates in European hospitals (Gargallo, 1993). Recently, studies have shown that reflection correlated with self-regulation of learning (Kuiper & Pesut, 2004) and positively affected learning in the clinical setting (Kautz et al., 2005; Liimatainen et al., 2001; A. Smith, 1998).

Research supporting reflection in clinical nursing education has shown that educators who guide the reflective process promote greater levels of reflectivity, consequently impacting the learning process (Kuiper & Pesut, 2004). For example, guided reflective discussions following a clinical experience may stimulate thoughts about skills performed, in addition to review of past similar experiences as they relate to learning professional practice. Reflection has been found to be beneficial to nursing practice in countries such as the United States of America, Canada, Ireland, New Zealand, Australia, Finland, and China (Glaze, 2001; Nicholl & Higgins, 2004). Reflective thinking is a desirable outcome associated with nursing curricula development and program planning (Patterson, Crooks, & Lunyik-Child, 2002), and it is a key component characterizing lifelong learning, which is imperative to professionals' growth and development (Bransford, 2002).

A reflective learning model that has influenced nursing education research is described by Mezirow (1990) who defined three levels of reflectivity: (a) non-reflection, or no reflective thought; (b) awareness of judgments, observations, and descriptions, and evaluation of planning and assessment of decisions; and (c) critical reflection including assessment of the need for further learning. Liimatainen et al. (2001) applied Mezirow's levels of reflectivity in their qualitative study of undergraduate nursing students ($N = 16$) finding that students using the lower level of reflection did not demonstrate efforts at validating assumptions and did not reach the third level of critical reflection. This work was supported by earlier studies conducted by Richardson and Maltby (1995), Wong, Kember, Chung, and Yan (1995), and Wong et al. (1997).

Murphy (2004) reported in her mixed-method study of the effects of instructing first-semester nursing students ($N = 33$) in the use of reflection and articulation to promote clinical reasoning, that the learners scored significantly higher on clinical reasoning than the control group scored. The qualitative analysis of the study identified a high frequency of students' use of reflection and articulation, consequently resulting in learners engaging in abstract learning and more self-regulated learning.

Kautz et al. (2005), in their study of junior pre-licensure nursing students ($N = 23$), found that intentional use of guided reflection by nurse educators significantly enhanced clinical reasoning skill acquisition. The guided reflection was used simultaneously with the application of the outcome present state test model of clinical reasoning, which uses evidence-based tools such as clinical reasoning webs and prompted journal writing, revealing that students made significant gains in the use of behavioral self-monitoring through self-observation and metacognitive self-evaluation.

A. Smith (1998) conducted a quantitative, longitudinal study of undergraduate student nurses' reflections ($N = 25$) about practice as they progressed through a three-year program in adult nursing. Through the use of reflective journals and interviews the students moved from acceptance of information to the questioning and critiquing of arguments and professional assumptions in relation to their relevance and appropriateness for practice. Smith concluded that there is some evidence that reflection involves the integration of practice experience and academic knowledge in the decision to retain or reject those reflective views.

Carroll et al. (2002), in their literature review of reflective practice in the nursing curricula, contend that there is little consensus of opinion regarding the exact nature of reflection, and there is little empirical evidence to support the benefits of teaching and assessing reflection or reflective practice. Studies that did not support reflection contended that learners were unable to apply theory to the practice setting (Honey et al., 2006; Lowe & Kerr, 1998; Nicholl & Higgins, 2004).

Lowe & Kerr (1998) did not find any significant difference in learning outcomes between learners ($N = 46$) who were taught through reflective teaching methods and those who were taught through conventional teaching methods. Nicholl and Higgins (2004), in their study of clinical nurse educators ($N = 20$), revealed that the use of reflective practice and learners' delivery of nursing care (application of theory to practice) was not evident. Nurse educators did not feel adequately prepared to teach reflective practice, and Nicholl and Higgins concluded that there is a need to clarify curricular content in relation to reflective practice in addition to preparing nurse educators for their role in teaching the subject more effectively. Honey et al. (2006), in their qualitative study of reflective assignments of second-year, pre-licensure nursing students ($N=12$), found that students acknowledged that reflection was beneficial to their learning; however, the integration of scientific knowledge into nursing practice was not apparent.

In summary, studies supporting the application of classroom theory to the clinical setting through reflection found that learners integrate theory and practice and thus develop clinical competence (Kautz et al., 2005; Liimatainen et al., 2001; Murphy, 2004; A. Smith, 1998). On the other hand, reflection is not universally defined in the clinical nursing education literature; the studies do not use consistent frameworks (Nicholl & Higgins, 2004), and there is no definitive consensus among clinical nurse educators claiming that reflection assists nursing students in the application of theory to clinical practice (Honey et al., 2006; Lowe & Kerr, 1998). It is important that researchers continue to probe into the effectiveness of the use of reflection for the reason that clinical nursing knowledge is socially constructed and may be impacted by the reflection of the

learners' contextual experiences (A. Smith, 1998; Welk, 2006). It clear that there is a need to clarify curricular content in relation to reflective practice in order to prepare nurse educators for their role in teaching about reflection more effectively (Nicholl & Higgins, 2004).

DI and Cognitive Task Structuring

Direct instruction calls for specific action whereby the teacher assumes responsibility for assisting performance, rather than expecting the learners to perform on their own (Dunphy & Dunphy, 2003). Cognitive task structuring provides a structure for the learner in organizing learned elements in relation to one another. The two concepts are presented together because cognitive task structuring is considered to be a component of DI, although they are mutually exclusive strategies.

The DI model was first created by Engelmann and his colleagues in the 1960s and has been researched in the field of education for its effectiveness in teaching reading, language, and mathematics (Engelmann & Bruner, 1969). It was included in the largest education research study ever conducted, consisting of the evaluation of 12 teaching models, across nearly 30 years, involving nearly 75,000 students at 180 sites (Bock, Stebbins, & Proper, 1977; Watkins, 1997). The model is a useful approach in maintaining time-on-task and the learning of skilled performance; it has high rates of success when designed correctly (Slavin, Madden, Dolan, & Wasik, 1996). Over the past 20 years DI has re-emerged as a tool that promotes various types of learning within contemporary learner-centered pedagogies (e.g., Eggen & Kauchak, 2001; Gersten, Baker, Pugach, Scanlon, & Chard, 2001; Schwartz & Bransford, 1998; Tharp & Gallimore, 1988).

The DI model was designed with three general stages of instruction (Bereiter & Engelmann, 1966): introduction of the new content to be learned, the primary presentation of the lesson, and practice with immediate feedback. Instruction occurs during the introduction. The primary presentation of the lesson is comprised of the SCBTS of modeling, questioning, and feeding-back. The practice session is comprised of cognitive task structuring, feeding-back, and questioning (Magliaro, Lockee, & Burton, 2005).

Direct instruction is used to assist learners in moving through their individual ZPDs. Educators outline the learner's performance into goals and tasks, breaking the

tasks into smaller parts, designing activities for mastery, and sequencing the learning events to encourage application of achievement of prior learning before moving to more advanced learning (Joyce, Weil, & Calhoun, 2000). However, if instructions become too authoritarian, they can provoke learner opposition. According to Gallimore and Tharp (1990) conscientious use of instructing does not create opposition but brings the teacher to the learning situation. The voice can ultimately become the learners' internal voice as part of the self-regulating mechanisms in the learning process. The non-instructing teacher may deny the learner of a valuable teaching interaction—the heard, regulating voice, which may become internalized within the learners' ZPD (Gallimore & Tharp, 1990).

Direct instruction is well-suited for situations where motor skills or prerequisite intellectual skills are involved (Gange, 1985). The six key components of DI (Magliaro et al., 2005) include the following: (a) materials and programs of study are broken down into small steps and sequenced in the required order; (b) objectives are stated clearly in terms of outcomes or performance; (c) learners are provided with opportunities to connect with prior knowledge; (d) learners are allowed practice with each step; (e) learners experience additional opportunities to practice, which promotes independent learning; and (f) feedback is provided after each practice opportunity.

In clinical nursing education, DI may be manifested in the instructors' voice when teaching nursing skills, and the learner may recall the instructors' voice when applying the information while moving to self-assistance in performance (Sanders & Welk, 2005). Direct instruction also can take place in the educators' support of written work in order for the learner to accomplish writing with less assistance. The educator initially provides supports such as printed outlines or charts to be completed, and eventually the learners are expected to verbalize and act upon what would have been written without the external support (O'Connor, 2001; Sanders & Welk, 2005).

Cognitive structuring, for example, taking place in the practice stage of DI, provides an opportunity for learners to learn organizational skills without calling for a particular action and refers to the provision of a structure for thinking and acting. In clinical nursing education, cognitive task structuring refers to how learners organize information in their memory for future thinking and action (Sanders & Welk, 2005). For

instance, concept mapping may help learners organize their knowledge and show what is significant to their learning for future recall. Concept maps allow the nurse educator to visualize the learner's cognitive structuring and help to discern what the learner knows and does not know, thus providing evidence of existing knowledge and its organization.

Cognitive task structuring has been studied in behavioral and cognitive science, thus providing known and dependable outcomes based on consistent and repeated assistance (Gallimore & Tharp, 1990; Rogoff & Chavajay, 1995). The structuring assists the learner by better fitting the task itself into the learner's ZPD. Cognitive task structuring includes such forms of assistance as chunking, segregating, sequencing, or structuring a task into manageable learning components (Tharp & Gallimore, 1991) and is particularly applicable in teaching methods to enhance skill acquisition (Eaton & Cottrell, 1999).

In summary, there are no studies per se on the topics of DI or cognitive task structuring in clinical nursing education. However, the research literature on the SCBTS of modeling, questioning, and feeding-back, described in this integrative review of clinical nursing education literature, serves as a foundational component in the stages of DI (Magliaro et al., 2005). Cognitive structuring in nursing education involves teaching learners to organize tasks while they are practicing nursing skills so that they can be recalled and applied in future situations (Sanders & Welk, 2005). The research in the education field, mentioned above, provides a clear argument for the use of DI in clinical nursing education as a means of scaffolding to meet learners' learning potential within their individual ZPDs (Bonk & Kim, 1998; Eggen & Kauchak, 2001; Gersten et al., 2001; Schwartz & Bransford, 1998; Tharp & Gallimore, 1988; Watkins, 1997). Nurse educators can assist learning by providing constant assessment of learners' understanding, providing DI as needed, and using cognitive task structuring in practice sessions with educators or more capable peers until learners are able to perform tasks independently.

Feedback

Managing instruction with performance feedback and positive reinforcement is used as a SCBTS to assist learners in the transition from other-assistance to self-assistance within their ZPDs (Bonk & Kim, 1998; Sanders & Welk, 2005). Feeding-back provides information on a performance as it compares to a standard, thus

allowing for self-correction (Tharp & Gallimore, 1991). Feedback can be provided in many forms, such as comments regarding skill performance, live observation of the learners' performance on video tapes, or by communicative interactions with an expert nurse educator or a more capable peer (Neil et al., 1998). Feedback exists within a closed loop whereby it is fed into a system that has a standard and a mechanism for comparing the performance to the standard (Dunphy & Dunphy, 2003).

Students in the clinical setting need reliable, scaffolded feedback from educators, thus allowing learners to gain information for themselves and consequently move more quickly to a self-assisted performance level. The clinical educator needs to be prepared in advance with prompts and probes that move learners and/or the clinical group toward a particular learning objective (Sanders & Welk, 2005). The learners may also gain feedback from more capable peers or other contextual sources such as clinical nurses or other healthcare providers (Peer & McClendon, 2002). The nature of feedback within the ZPD allows the learner to configure and re-configure thinking as needed under the educator's guidance.

Feedback is seen in the clinical nursing education literature in the behavioral characteristics of effective clinical educators (Donaldson & Carter, 2005; Hsu, 2006; Johnsen et al., 2002; Nahas et al., 1999; Nahas & Yam, 2001). Clinical instructors provided constructive feedback to learners in Donaldson and Carter's (2005) study of nursing students' ($N = 42$) perceptions of instructors who were considered to be good role models. Providing feedback showed teaching competence in Hsu's 2006 study in the observation of 10 nurse educators' teaching behaviors in the clinical setting. Johnsen et al. (2002) found that nurse educators ($N = 348$) rated nurse educators' offering of constructive feedback and honesty in providing feedback to learners as the most important evaluation skills. Nahas et al. (1999) ($N = 452$) and Nahas and Yam (2001) ($N = 189$) found that students' perceptions of the instructors providing feedback was the most important effective clinical educator behavioral characteristic.

In addition to the previous studies, Rossignol (2000), in her study of post-conference discourse of generic nursing students ($N = 74$), found that feedback from both faculty and students played an influential role in student learning; more than 65 percent of the discourse involved feedback in the form of responses and reactions.

Student and faculty feedback were important in determining the group's comprehension of nursing practice. Communication feedback between the faculty and students was kept at an appropriately challenging level, assisting students to higher level thinking within their ZPDs.

In summary, feedback in the clinical nursing education literature is measured primarily as a behavioral characteristic of effective clinical instructors (Donaldson & Carter, 2005; Hsu, 2006; Johnsen et al., 2002; Nahas et al., 1999; Nahas & Yam, 2001). Feedback is also valued in the development of the clinical nurse educators' skill in conducting effective student evaluations (Johnsen et al., 2002). The feedback from peers and educators in post-conference discourse is important (Rossignol, 2000) in challenging students to reach their learning potential within their ZPDs. There is a lack of studies regarding contextual feedback in the clinical nursing education literature, such as feedback from patients, staff nurses, and/or hospital personnel, where learning also occurs. It is important to measure feedback in all of its contexts to assist today's learners in the transition from other-assistance to self-assistance (Sanders & Welk, 2005).

Summary of SCBTS in Clinical Nursing Education Studies

The integrative literature review of SCBTS in clinical nursing education reflects studies in these categories: modeling, scaffolding and coaching, questioning, articulation, exploration, reflection, DI and cognitive task structuring, and managing instruction with feedback. A summary of each of the SCBTS follows concluding with a synthesis and critique of the studies.

The majority of the role modeling studies (Beitz & Wieland, 2005; Benor & Levyof, 1997; Brown, 1985; Donaldson & Carter, 2005; Gignac-Caille & Oermann, 2001; Hsu, 2006; Johnsen et al., 2002; Kotzabassaki et al., 1997; Morgan & Knox, 1987; Nahas et al., 1999; Nahas & Yam, 2001; Nehring, 1990) informs the profession of the importance of the educator in the clinical setting; however, contextual learning is rarely taken into account and is missing from the clinical nursing education literature (Benor & Levyof, 1997; Cowman, 1998; Marsh & Roche, 1997; Phillips, 2007a). It is important to include context in the clinical nursing education studies, as described in Bonk and Kim's (1998) SCBTS and Rogers' (2003) norms of the social system (e.g., POS). These

variables may be significantly influential in the exploration of the adoption of new teaching strategies by clinical nurse educators.

In the studies of the SCBTS of scaffolding and coaching, the clinical nursing education literature revealed that learners showed higher levels of thinking (Rossignol, 2000), achievement of more skills without help and movement toward independent student competence (Cope et al., 2000), faster development of professional abilities (Spouse, 2001), and more effective clinical conferences (Hsu, 2007). There were no studies concerning the limitations of using scaffolding and coaching, which may provide insight into areas of improvement in teaching and learning.

The findings from the studies of the use of questioning concluded that clinical educators ask predominantly low-level questions (Hsu, 2007; Phillips & Duke, 2001; Profetto-McGrath et al., 2004; Sanders & Welk, 2005; Sellappah et al., 1998). The frequent use of low-level questions illuminates the fact that many clinical educators have not been taught the skill of questioning and how to use the strategy effectively. The studies inform the profession of the importance of assisting learners in the development of clinical/critical thinking, decision-making, and problem-solving through questioning, and point to the need for professional development for clinical educators in learning effective questioning strategies.

The literature of the SCBTS of articulation points to the importance of assisting learning within the ZPD through the solicitation of verbal and/or written articulations by clinical nurse educators. Clinical post-conferences (Letizia, 1998) and reflective journaling (Daroszewski et al., 2004; Fonteyn & Cahill, 1998; Jensen & Joy, 2005; Murphy, 2004; Ritchie, 2003) are two areas in which clinical nursing research has been conducted. Articulation has assisted students in becoming more active learners (Fonteyn & Cahill, 1998), increasing self-awareness and professional growth (Ritchie, 2003), increasing higher levels of reflection and enhancing discussion (Jensen & Joy, 2005), mentoring, and socialization (Daroszewski et al., 2004). However, only one study was found regarding the evaluation of the learners' journals (Jensen & Joy, 2005), thus explicating the need to explore the evaluation of students' written articulation using theoretical frameworks.

The literature of the SCBTS of exploration and application of problem-solving skills in clinical nursing education points to the importance of integrating the creative arts and humanities into problem-solving (Jackson & Sullivan, 1999), teaching problem-solving to encourage learners in probing deeply and developing lifelong learning skills (Wang et al., 2004) and teaching creative thinking to solve problems that emerge from today's complex health care system (Kalischuk & Thorpe, 2002). Encouraging exploration so that learners can problem-solve independently has begun to appear in the clinical nursing education literature, although the research is meager. More studies of teaching exploration and problem-solving are needed to help establish evidence of their effectiveness in preparing nurse graduates for today's health care system.

The studies supporting the SCBTS of reflection in the application of classroom theory to the clinical setting contend that learners develop clinical competence (Kautz et al., 2005; Liimatainen et al., 2001; Murphy, 2004; A. Smith, 1998). On the other hand, reflection is not well defined, and the studies do not use consistent theoretical frameworks (Nicholl & Higgins, 2004); therefore, there is little consensus among clinical nurse educators claiming that reflection assists nursing students in the application of theory to clinical practice (Honey et al., 2006; Lowe & Kerr, 1998). It is important to continue to research reflection because adults' knowledge is largely socially constructed through the reflection of the learners' contextual experiences (A. Smith, 1998; Welk, 2006). It is also important to clarify curricular content in relation to reflective practice in order to prepare nurse educators for their roles in teaching the SCBTS of reflection more successfully (Nicholl & Higgins, 2004).

The clinical nursing education literature does not contain any studies on the strategies of SCBTS of DI or cognitive task structuring. However, because DI may incorporate such SCBTS as modeling, questioning, and feeding-back (Magliaro et al., 2005) described previously in this integrative review of clinical nursing education literature, those findings may be reviewed. Cognitive structuring, which may be used in the third stage of DI, involves teaching learners to organize tasks while they are practicing skills so that they can be applied in future situations (Sanders & Welk, 2005). The research in the education field, mentioned above, provides a clear argument for the use of DI in clinical nursing education as a means of scaffolding students' learning

potential within their individual ZPDs (Bock et al., 1977; Eggen & Kauchak, 2001; Gersten et al., 2001; Magliaro et al., 2005; Schwartz & Bransford, 1998; Tharp & Gallimore, 1988; Watkins, 1997).

Feedback in the clinical nursing education literature is measured primarily as a behavioral characteristic of effective clinical instructors (Donaldson & Carter, 2005; Hsu, 2006; Johnsen et al., 2002; Nahas et al., 1999; Nahas & Yam, 2001). Feedback from other sources such as students and peer educators is valued for the development of the clinical nurse educators' skill in conducting effective student evaluations (Johnsen et al., 2002), and feedback from peers and instructors in post-conference discourse is important (Rossignol, 2000) in challenging students to reach their learning potential. There is a dearth of studies regarding contextual feedback in the clinical nursing education literature (Benor & Leviyof, 1997; Cowman, 1998; Marsh & Roche, 1997; Phillips, 2007a) where learning also occurs. It is important to measure contextual feedback to assist today's learners in becoming independent, lifelong learners (Sanders & Welk, 2005).

Synthesis

A synthesis of the 32 studies in the literature review revealed that modeling (with 9 studies) is the most frequently researched SCBTS in clinical nursing education in the past decade. Modeling behavior has been linked to the importance of the educator in the clinical setting; however, contextual learning from role models in the clinical setting is lacking in this literature. There were eight reflection studies, half claiming that reflection helped learners connect classroom theory to clinical practice and half claiming that it did not. Reflection is not well defined, and research indicated that nurse educators need to be prepared to teach it more effectively. Articulation was found in seven studies proclaiming several outcomes (e.g., active learning, self-awareness, enhancing discussion, and role socialization); however, there is a lack of research about how to evaluate written and verbal articulation in clinical nursing education. Feedback was found in six studies and was seen primarily as a behavioral characteristic of effective clinical instructors. There is a dearth of studies about contextual feedback in clinical nursing education (e.g., feedback from patients, nurses, other health care providers, the social system with the hospital environment, etc.). Questioning was found in four studies concluding that clinical educators ask predominantly low-level questions, pointing to the need for faculty

development on the skill of questioning to enhance learning within learners' ZPDs. Coaching and scaffolding were found in four studies concluding that learners showed higher level thinking when coached with a scaffolded approach, although there were no studies on the limitations of these SCBTS. Exploration and application of problem-solving skills were found in three studies, showing their relationship to thinking creatively and probing deeply in solving clinical problems, although much more research is needed to show its effectiveness. No studies in nursing education about DI or cognitive task structuring were found in the clinical education literature per se; however, large studies in the general education literature point to their effectiveness, particularly in learning skills and tasks.

Critique

The research in clinical nursing education points to the use of some SCBTS; however, there is a general dearth of literature with only 32 studies in the past decade located. The scarcity of studies of SCBTS is in line with the general lack of clinical education studied; limited studies have been conducted to examine the theoretical significance of clinical teaching, and very few studies have been replicated or cross-validated (Andrews et al., 2001; Cook, 2005; DeYoung, 2003; Diekelmann, 2001; Kautz et al., 2005; Liimatainen et al., 2001; Makarem et al., 2001; Phillips, 2007a).

Most of the studies in clinical nursing education have small sample sizes, use different methods and instruments, and have restricted settings (Yonge et al., 2005). The scarcity of well-designed studies in clinical nursing education is likely a result of the complexity and unpredictability of the clinical situations, which are difficult to reproduce in the clinical laboratory where many clinical skills are evaluated (DeYoung, 2003). The measurement of student learning on didactic classroom tests and/or in skill demonstrations in clinical laboratories, which may or may not indicate that learners can apply the theoretical principals in the clinical setting, add to the difficulties of clinical nursing education studies (Phillips, 2007a).

A critical analysis and synthesis suggest that there are a multitude of theoretical, methodological, and measurement flaws in the studies. These flaws are consistent with the critiques and reviews of studies in nursing education (Stevens & Valiga, 1999; Yonge

et al., 2005; Zellner, Boerst, & Tabb, 2007) and the studies of clinical nursing education in particular (DeYoung, 2003; Makarem et al., 2001; Phillips, 2007a).

Theoretical Flaws

Although all studies specified research questions or hypotheses, only 28 percent ($N = 9$) cited a theoretical framework; thus, 70 percent were a-theoretical ($N = 23$). Only one study (Kautz et al., 2005) provided a visual model to explain the relationships between the variables and their connections to the overall theoretical framework. Identified theoretical frameworks reflected a diverse range including (a) Bandura's (1977) theory of modeling; (b) a questioning framework developed by the researchers (Profetto-McGrath et al., 2004); (c) an unnamed researcher-developed framework (Sellappah et al., 1998) based on Bloom's (1956) taxonomy of the cognitive domain; (d) thinking in action (Schön, 1982); (e) Mezirow's (1981) reflective model; (f) Carper's (1978) ways of knowing; and (g) the outcome present state test (Kautz et al., 2005).

Learning theories were identified in only 25 percent ($N = 8$) of the studies, also revealing an eclectic range of theories including (a) Bandura's social learning theory (1977); (b) situated learning theory (Brown, Collins, & Duguid, 1988; Lave & Wenger, 1991); (c) sociocultural learning theory (Vygotsky, 1978); (d) unnamed cognitive and behavioral learning theories (Sellappah et al., 1998); (e) self-regulated learning model (Kautz et al., 2005); and (f) transformative learning theory (Mezirow, 1990).

Whereas 66 percent of the studies contained conceptual definitions of the variables ($N = 21$), just over half ($N = 17$) provided operational definitions, and 19 percent ($N = 6$) contained neither. Twelve studies (37%) contained both conceptual and operational definitions that were consistent with the theoretical frameworks underpinning the studies.

Methodological Flaws

Sample sizes were small (< 100) in 66 percent of the studies ($N = 21$) reviewed. Forty-one percent used qualitative methodologies ($N = 12$), 31 percent of the studies used quantitative methodologies ($N = 10$), and 28 percent were mixed method studies ($N = 9$). Of the qualitative studies, seven used content/thematic analysis, two used constant comparative analysis, two used observational analysis, and two used longitudinal analysis. Of the quantitative studies, six used descriptive methods, two used

descriptive/correlational methods, and two used an experimental method. The mixed studies included four descriptive/content analyses, three descriptive/correlational/content analyses, one correlational/multivariate/integrative reasoning analysis, and one experimental/content analysis.

Content analysis was used for the majority of the qualitative and mixed studies, and most remained at the descriptive level, thus providing little in-depth insight into the clinical teaching and learning phenomenon (Clifford, 1999). The use of the mixed and qualitative studies shows an increasing trend in recent nursing education research (Yonge et al., 2005) as seen in this integrative review.

The setting was described in all studies; however, 69 percent took place in only one school of nursing ($N = 22$), and 31 percent ($N = 10$) took place in more than one school of nursing. The limited settings may result in findings that are not generalizable to the general population (Kerlinger & Lee, 2000).

The data analysis of the qualitative studies revealed less sophisticated thematic analysis (content analysis), whereas only two studies moved beyond the thematic analysis by using interpretive phenomenology. The majority of the data analysis of the quantitative studies was descriptive (using mean, median, variance, standard deviation, percentiles, and percentages), with only one study using multivariate data analysis (ANCOVA). The inferential statistics consisted mostly of reliability measurement (Cronbach's alpha) and other well known statistical tests (t tests and ANOVA). The data analysis limitations are consistent with other research in nursing (Phillips, 2007a; Yonge et al., 2005; Zellner et al., 2007).

Measurement Flaws

The instrumentation in the studies was the most outstanding measurement flaw noted. Of the descriptive and mixed studies, two studies established validity and reliability of the instruments, six studies established reliability without validity, one study established validity without reliability, and six studies did not establish validity or reliability. The consistent paucity of conceptual definitions, operational definitions, theoretical frameworks, and learning theories made it impossible to determine consistency between conceptual and operational definitions and their relationships to

theoretical frameworks. The deficiencies described above are consistent with other research in nursing education (Phillips, 2007a; Yonge et al., 2005).

Limitations of SCBTS in Clinical Nursing Education Studies

Following the completion of this integrative review of the literature, a number of limitations were identified. First, the articles may have contained insufficient information because authors are subject to editorial guidelines and may have omitted data based on journal space limitations. Second, the review period covered a 10-year span; therefore, speed of dissemination was a concern since many journals may take years to publish a submitted manuscript. Third, regardless of the comprehensive searches using multiple databases and hand searches, the author was still concerned that the literature review was not comprehensive. Fourth, the literature review included only major published research articles in peer-reviewed journals; therefore, many sources of research were omitted including theses, reports, and non-published research. Lastly, convenience samples were used in 85 percent ($N = 28$) indicating limited generalizability of the findings (Kerlinger & Lee, 2000). Self-report was used in all but two studies (94%) indicating the possibility of inflation bias (Kerlinger & Lee, 2000), and there was limited confirmation of findings from independent observations.

Gaps in the Literature and Implications for this Study

It is clear that the most glaring gap in the literature is the fact that there were no studies found addressing the adoption of SCBTS in clinical nursing education. Clinical nursing education is in need of improved methods of teaching and learning where students are resourceful and can problem-solve in complex health care environments. Vygotsky's (1978) SCT is suited for teaching in the clinical setting because context is a particularly major factor in the understanding of adult learning with adults encountering significant social phenomenon including learning based in individual, cultural, social, institutional, and historical settings.

A review of the literature of these SCBTS in nursing education reveals other significant gaps, largely due to the fact that only 32 studies in the past decade have been identified. Bonk and Kim's (1998) SCBTS was used to operationalize the teaching strategies in the survey for this study, and vignettes were used to provide examples of each of the SCBTS. Vignettes have been used successfully in past research to measure

attitudes, values, beliefs, and abstract concepts, and the response rate is also higher than in conventional surveys (Gould, 1996).

Modeling was the most researched SCBTS but lacked components about contextual factors in learning. This study provided a vignette with an example of a contextual factor in the learning environment (e.g., student learning from a physician). Reflection was not well defined in the literature; however, a vignette in this study provided an example of the use of reflection, thus explicating its use in the clinical setting. Articulation was often encouraged with the use of reflection, and this study tied the two concepts together through vignettes. Feedback was seen primarily as a behavioral characteristic of effective clinical instructors, and there is a dearth of studies about contextual feedback in clinical nursing education. The vignettes in this study provided suggestions for contextual feedback in addition to positive reinforcement. Questioning by most clinical nurse educators encouraged low-level thinking in learners. This study provided an example of using questioning through the use of a game (a Jeopardy-like questioning and answering game) to reinforce new content learning and its application in the clinical setting, thus encouraging higher-level thinking. Coaching and scaffolding were used to encourage higher-level thinking through the use of the vignettes. Exploration through creative thinking and problem-solving using the arts and humanities was very sparse in the literature. This study used a vignette to provide an example of using exploration through the use of poems and asking students to reflect on the care given to oncology clients. There were no studies about DI or cognitive task structuring in the literature, even though they have been widely studied in the general education field. Vignettes provided examples of how to use both of these strategies in the clinical setting.

Determining what SCBTS are being used by clinical nurse educators across the United States provided a descriptive foundation in this study for determining what factors were associated with the adoption or rejection of the SCBTS. The 32 studies found in the literature point to the dearth of literature in clinical nursing education over the past decade, and this study addressed the paucity by providing evidence of what SCBTS, as defined by Bonk and Kim (1998), are in use.

Rogers' (2003) model provided a framework for examining what characteristics nurse educators consider when adopting SCBTS. Again, there were no studies in the

clinical nursing education literature that addressed the adoption of SCBTS by nurse educators. This study addresses this research gap by providing evidence of how nurse educators consider the perceived characteristics of SCBTS when adopting or rejecting them, based on Rogers' model.

Rogers' (2003) prior conditions, the norms of the social system, were also taken into account in this study. There were no studies found that addressed the norms of POS for clinical nurse educators and how this support (or lack thereof) is related to the adoption of SCBTS.

Limitations to Sociocultural Theory

Although SCT shows promise as a theoretical framework for underpinning needed changes in clinical nursing education to prepare nurse graduates for complex work environments, several limitations have been noted: (a) Research has been conducted primarily in classroom settings with children; (b) Measuring student thinking in the clinical setting remains elusive; (c) Resistance to change by faculty and learners may create barriers to the adoption of the sociocultural approach to teaching and learning; (d) Accrediting agencies may unintentionally create teacher-centered and competency-based teaching and learning environments, thus making new approaches unattractive to faculty and learners; and (e) Vygotskian treatment of teaching has the potential to be authoritarian without faculty development about SCT.

Sociocultural researchers emphasize methods that document cognitive and social change (John-Steiner & Mahn, 1996) for classroom learning and teaching primarily for children. The applications of SCT, which study the dynamics of collaboration and the interdependence of individual and social processes in adults, are in need of further practical and theoretical development.

Students' thinking in nursing education research is difficult to measure and may be confounded by a multitude of inconclusive research on the concept of critical thinking (Tanner, 2005). Sociocultural theory does not include a definition of thinking per se. On the other hand, Vygotsky (1978) encouraged educators to assist learners toward higher levels of thinking within their ZPDs; however, high level questioning is undefined. Explaining how educators teach and learners learn about thinking in clinical situations sheds light on the contextual features of clinical practice that may impact learners'

learning to think (Ironsides, 1999b). However, no SCT research has been conducted to evaluate the relationship between specific teaching strategies and learners' ability to think in clinical nursing situations. There remains great difficulty in providing opportunities for learners to demonstrate thinking in actual clinical situations as a result of the rapidly changing context, and schools of nursing continue to be restricted to limited clinical environments (Ironsides, 1999a). The SCT approach to teaching and learning is challenged to measure student thinking in the clinical setting.

Resistance to change in academic environments is often a great barrier to the adoption and implementation of different teaching approaches (Dee, 1999; Pardue, 2005; Siegel & Kaemmerer, 1978). The organizational culture in academic institutions is infamous for resistance to change as a result of long-held traditions and the desire to maintain the status quo (Dee, 1999; Keup et al., 2001). The past three decades have brought extreme social, political, economic, and technological changes, but schools have not changed their basic organizational structure (Dooley, 1999). Latham (1988) explains that new approaches to teaching and learning fail in education for a variety of reasons such as: (a) Educators are disheartened and let down because the new approach is more complex than expected; (b) The new approach causes unease from too much change; (c) It takes too much time to implement; (d) Supporters of the new approach leave; (e) Personnel lack appropriate instruction and interest; (f) Funds for the new approach run out; (g) There is inadequate supervision for the implementation of the new approach; (h) There is no accountability for the outcomes of the new approach; (i) There is a laissez-faire attitude about the new approach; and/or (j) There are no consequences for termination of the new approach. Faculty resistance to change continues to be a barrier to the adoption of new approaches to teaching and learning.

Other barriers to change include the perceived environmental uncertainty and the social climate of the work setting (Garrett & McDaniel, 2001). Clinical educators may view the changes in teaching approaches within the academic and/or clinical environments through a lens of uncertainty as a result of the perception that crucial information about the changes may not be available, thus leading to an inability to predict changes in the environment. The social climate of the academic and/or clinical work

setting may also affect the clinical nurse educator since the adoption of new teaching and learning approaches may or may not be supported by peers or administrators.

Growing pressures from accrediting agencies identify clear student learning outcomes, which may have produced the unintended consequences of emphasizing outcome-based instruction at the expense of interactive-centered models in education (Quehl, Bergquist, & Subbinonda, 1999). This has been the case in clinical nursing education, causing educators and learners to feel enormous pressures to conform to outcome-based evaluations of learners' clinical learning. New approaches to teaching can facilitate critical student learning through the use of creative, engaging, and student-centered learning environments in schools of nursing (Diekelmann & Lampe, 2004; Tanner, 2007).

Competency-based learning, which is mandated by the accrediting bodies in nursing, may stifle the creative response to teach in ways other than using traditional teaching models (Quehl et al., 1999). Both faculty and learners tend to resist changes in teaching and learning approaches because the pressure to conform to rigid standards set by accrediting bodies may outweigh the appeal of nontraditional teaching and learning approaches. Nurse educators and learners may be more comfortable with the clear guidelines set forth by accrediting bodies and institutions and, consequently, may have difficulty with the ambiguity of the consequences of new theories in teaching and learning.

The Vygotskian treatment of teaching has the potential to be authoritarian, and educators may view the more experienced educator as the authority on teaching, which may lead some to justify teaching as one was taught (Confrey, 1995). The sociocultural clinical educator must be taught how to teach using Vygotsky's (1978) six concepts: ZPD, internalization, scaffolding, intersubjectivity, cognitive apprenticeship, and assisted learning. When knowledgeable about the concepts of SCT, both educators and learners recognize that social and individual developments are shaped by one another in the learning environment. A lack of professional development tends to maintain the status quo in academic institutions (Gallimore & Tharp, 1990); consequently, contemporary clinical nursing education research remains largely a-theoretical in a time that is

desperately in need of evidence-based, theory-driven teaching and learning. (Phillips, 2007a).

Practical & Scholarly Applications of Sociocultural Theory

Sociocultural theory provides a valuable framework for clinical student learning. However, this knowledge is unusable unless it is applied to the clinical learning environment and shared with the community of clinical nurse educators. Clinical teaching and learning, assessment, research, and the scholarship of teaching and learning are all important areas in which SCT may directly impact clinical nursing education.

Clinical Teaching and Learning

The clinical component of nursing education is critical to student learning, whether it is in the form of the provider of patient care or a partner in the learning of the health care environment with nurse educators, clinicians, and/or peers. Today's learners are increasingly more mature and diverse. They attend school part-time, work long hours, and pay for their tuition (Pardue, 2005); therefore, the sociocultural approach may be used to support diverse social and cultural student learning needs. As learners actively participate in clinical experiences, they are learning more than cognitive knowledge and psychomotor skills in that social and cultural aspects of teaching and learning are included in acquiring new knowledge.

Professional behaviors are learned through mentoring relationships with educators and clinicians concerning the intricacy of the demands of the nursing profession. Nahas and Yam (2001) and Nahas et al. (1999) found that professional behaviors gained through modeling in clinical education is one of the most helpful components of student learning. This research was further supported by Benor and Levyof (1997), Johnsen et al. (2002), and Kotzabassaki et al. (1997) highlighting clinical educators' professional competence as important role modeled behaviors. These authors contend that mastery is enhanced through careful selection of the clinical nurse educators and clinicians who provide mentoring, professional acceptance, and role socialization for the student nurses. Role modeling, provided in a climate of mutual respect, serves as a scaffold to assist student knowledge-building by providing opportunities for teacher-student interaction for mutual learning (Sanders & Welk, 2005).

Exposing learners to the actual work environment as part of the learning process is a necessary and fundamental component of knowledge construction for nurses. Being submerged in the culture of the profession enhances professional competency and facilitates self-efficacy beliefs for success. In this environment, learners become active learners capable of solving complex problems and constructing meaning that is grounded in real-world experiences (Makarem et al., 2001). Clinical educators can foster student motivation and learning of the complexities of the health care system by scaffolding learning activities that support active involvement with peers, clinical educators, and clinicians. Learning activities can be scaffolded through modeling, feedback, encouraging articulation, and high-level questioning strategies by clinical faculty (Cooke, 1996; Phillips & Duke, 2001; Sanders & Welk, 2005).

In the social environment, learners learn personal skills related to professional development. Ironside (2005) addressed the need for engendering community through the narratives of learners, teachers, and clinicians working together through enacting narrative pedagogy. Both curricular and instructional reform are beginning to occur as nurse educators and learners work together to envision and create new education models that respond to the challenges of today's multifaceted and changing health care environment. Converging conversations are addressed by Diekelmann (2001) who contends that conversations between learners, educators, and clinicians are a way of keeping open the possibility for anything to emerge, suggesting an avenue toward reforming nursing education. The social environment provides learners and educators with opportunities to co-construct new meanings and knowledge through collaboration with peers, educators, clinicians, and patients where learners can reflect, explore, and articulate personal skills and professional development within their ZPDs.

Student Evaluation

Sociocultural theory can be applied directly to student evaluation of learning in the clinical setting. Guidelines for high-quality learning environments from research on how people learn (Bransford, Vye, & Bateman, 2002) suggest that one important focus for teachers to consider is the degree to which teaching and learning environments are learner-centered. Although learner-centered approaches to assessment are promoted in SCT, these approaches must be carefully structured for the academic level of the

individual student and the individual corresponding ZPD. In the clinical setting, formative and summative feedback through scaffolded communications between the clinical educator and the student provide for construction of knowledge and application of that knowledge in real-world situations. Learners consistently rate the feedback from clinical educators as highly important in their learning in the clinical setting (Gignac-Caille & Oermann, 2001). Educators' coaching, cognitive task structuring (explaining and organizing tasks within the learners' ZPDs), and managing instruction through performance feedback and positive reinforcement constitute a variety of ways to provide meaningful feedback to enhance student learning in the clinical setting.

The utilization of mediation using evidence-based tools, such as clinical reasoning webs and prompted journal writing, revealed that learners made significant gains in the use of behavioral self-monitoring through self-observation and metacognitive self-evaluation (Kautz et al., 2005; Kuiper & Pesut, 2004). Liimatainen et al. (2001) found that video taping communications between learners and patients allowed clinical educators to identify learners fixed at low and high levels of reflection; consequently, the clinical educators were able to help learners progress toward a personal and reflective growing process to assist in the construction of meaning schemas in patient health counseling. Cowman (1998) found that learners' learning is context-dependent, and the importance of the educator may not be as important as once thought, thus contending that the social environment in which learners are immersed plays a vital role in knowledge acquisition and application.

Research

Preparing nurse graduates for the complexities of today's health care environment requires changes in the research of how nurse educators teach and evaluate learners in the clinical setting. The current clinical education research is largely a-theoretical and focuses primarily on the behavioral characteristics of clinical nurse educators (Phillips, 2007a). The nursing profession sorely needs to develop sound models of learning that inform safe practice, as has been accomplished in other disciplines (Bleakley, 2006). Other health care professions face similar challenges (Institute of Medicine [IOM], 2003) to overhaul education to better prepare clinicians to meet both the needs of patients and the requirements of a changing health care system. According to the IOM,

evidence-based practice is needed to integrate research findings with clinical expertise in order to achieve optimal patient care. As evidence-based practice is needed in the improvement of practice, evidence-based teaching is needed to improve clinical teaching, research, and scholarship.

Evidence-based teaching (Ironsides, 2006; Stevens & Valiga, 1999; Valiga, 2006) is needed in order to provide a foundation from which nurse educators can draw as they begin to deploy SCT to their teaching repertoire. Organizing information for learners into a conceptual framework based on SCT will allow learners to see patterns and to cultivate a metacognitive approach that can help learners take control of their own learning. Sociocultural theory has both conceptual and operational definitions, which makes it easily adaptable to clinical nursing research. Sound data is needed about nurse graduates' performance and the effects on client care, both of which may be linked to the educational and theoretical approaches that underlie nursing education programs (Iwasiw et al., 2005).

Research in clinical nursing education using SCT can provide salient evidence of its effectiveness because the theoretical underpinnings interface well with the social context and interactive aspects of clinical teaching and learning. Partnering with the learner in the education process allows the clinical educator to optimize student growth, development, and socialization in professional nursing (Sanders & Welk, 2005). Collaboration between learners, educators, peers, and clinicians allows for facilitation of student learning and growth toward higher levels of thinking within learners' ZPDs. Providing evidence of higher level thinking in learners may ultimately lead to better prepared graduates as they enter the health care system work-ready. Research about approaches to assist student learning through such SCBTS as modeling, feedback, and high level questioning can be capable of providing evidence of heightened student learning. Research about scaffolding strategies may enhance clinical faculty's teaching and evaluation skills, resulting in preparing quality nursing professionals who can safely care for extraordinarily ill patients in difficult and challenging, complex health care delivery systems.

Scholarship

The scholarship of teaching and learning can benefit from research about the use of SCT in clinical nursing education. There is a need for evidence-based teaching to provide clinical nurse educators with the knowledge and skills to educate learners to safely care for patients in today's vastly different health care delivery system (Valiga, 2006). The NLN has identified core competencies for nurse educators, one of which is to engage in scholarship (Halstead, 2007). According to the NLN (2005), to engage in scholarship effectively, nurse educators must (a) draw on evidence-based literature to improve teaching, (b) exhibit a spirit of inquiry about teaching and learning, (c) design and implement scholarly activities in an established area of expertise, (d) disseminate nursing and teaching expertise through various means and to a variety of audiences, (e) demonstrate skill in proposal writing for grants and other funding initiatives, and (f) demonstrate the qualities of a scholar: integrity, courage, perseverance, vitality, and creativity.

The NLN has established prestigious Centers of Excellence awards to publicly recognize schools of nursing who have distinguished themselves in student learning and professional development, faculty development, or the development of the science of nursing. The program serves to stimulate conversation about scholarly work surrounding excellence in nursing education and how it is achieved and identifies schools that are innovative in their approach to nursing education (Valiga, 2003). Schools of nursing who establish themselves with Centers of Excellence awards are in a prime position to disseminate scholarly work about nursing education based on theoretical underpinnings such as SCT.

As clinical nurse educators begin to engage in the scholarship of teaching and learning, it will be critical for faculty to be well informed about clinical education research. This information will contribute to scholarly endeavors, which require an evidence-base if clinical nursing education is to become perceived as credible and ever-growing (Halstead, 2007; Valiga, 2006). Sociocultural theory can provide significant underpinning to quality research, which can support programs and resources that advance evidence-based teaching. Research in SCT in clinical nursing education can provide a foundation for preparatory programs that are designed to prepare clinical nurse

educators for their professional roles. Sound research about SCT can help to secure much needed funding for future education-related research from grants for small studies and pilot studies to national, multi-site projects. The scholarly clinical nurse educators whose research is grounded in SCT will contribute to the efforts to advance the scholarship of evidence-based teaching and learning in important efforts to develop the wide-ranging science of nursing education.

Preliminary Studies

Two preliminary studies were performed by the author to provide foundational information for this dissertation study. The first, a study funded by the NLN, was a descriptive study of intentions to adopt innovative, SCBTS by clinical nurse educators. The second study was a pilot study for the development and psychometric testing of the PAAI, which constituted the majority of items in the survey instrument for this dissertation study.

NLN-funded Study

The purpose of the NLN study, “Factors Describing Nurse Educators’ Intent to Adopt Innovative Teaching Strategies” (Phillips, 2008), was to describe intentions to adopt innovative teaching strategies in clinical educators who have participated in an online course focusing on the role of clinical teaching ($N = 71$). Innovative teaching strategies were defined as those which embrace the tenets of SCT, an approach whereby the role of the nurse educator is to motivate and support the student and, in mutual process, to push the students to reach toward their learning potential by using guiding techniques that can be erected or gradually reduced based on the students’ learning needs. Participants stated that compatibility, trialability, and relative advantage would be most important in the adoption of innovative teaching strategies. Encouraging students to explore and apply new knowledge was described as the teaching strategy most likely to be adopted. The intent to adopt innovative teaching strategies may provide insight into the development of organizational climates in schools of nursing that could foster needed changes in clinical teaching to meet today’s challenges of preparing nurse graduates to work in complex and ever-changing health care delivery systems.

Introduction

The focus of this pilot study was to examine nurse educators' intent to adopt innovative, SCBTS in clinical nursing education by measuring their perceived characteristics and descriptions of innovative teaching strategies. The study was intended to provide descriptive information for a later study (this dissertation research study) that would measure the adoption of specific SCBTS. This provided an enhanced understanding of the intent to adopt innovative, SCBTS, which could offer insight into the possible diffusion of needed innovative teaching strategies into clinical nursing education and the development of new clinical models in preparing competent, skillful, and caring graduates for today's complex health care system.

Sample

Participants consisted of clinical faculty ($N = 71$) who had completed the online course, "Clinical Faculty: A New Practice Role," which was designed to orient clinical faculty to the principles of teaching and learning in schools of nursing in the clinical setting. This convenience sample was chosen to provide insight into the perceived characteristics that clinical faculty members consider when adopting new teaching strategies, which have implications for fostering organizational climates conducive to the use and diffusion of innovative teaching strategies in schools of nursing. It was assumed that the clinical faculty knew what innovative, SCBTS were because they had completed the online course, moreover they most likely had been conversely exposed to traditional approaches in their own education.

Instrument

The instrument was developed by the author (Phillips, 2008) to measure the intent to adopt innovative, SCBTS for the reason that an instrument did not exist in the nursing education literature. The instrument was divided into four sections (see Appendix B): (a) Part I. Demographic characteristics; (b) Part II. Characteristics of innovative teaching strategies based on Bonk and Kim's (1998) SCBTS for adults; (c) Part III. The influence of Everett Rogers' (2003) perceived characteristics of an innovation on the adoption of future innovative teaching strategies; and (d) Part IV. Open-ended questions. The open-ended questions allowed participants to describe innovative teaching strategies which they were presently using in addition to strategies that they intended to use in the

future. The instrument was reviewed by three content experts who are doctorally-prepared nurse educators knowledgeable in SCT and Roger' (2003) diffusion of innovations. Revisions were made on the items based on the feedback from the content experts, establishing content validity. Cronbach's alpha was .93 and .74 for parts II and III respectively, establishing reliability. Confidentiality and anonymity were ensured to the respondents based on the survey company's software design.

Data Collection and Analysis

Following Institutional Review Board (IRB) approval, participants were surveyed after completing the online course. Descriptive quantitative data analyses were completed on the demographic questions, the characteristics of the innovation (Bonk & Kim, 1998), and the relationship of Rogers' (2003) perceived characteristics on the future adoption of innovative teaching strategies. Content analysis was completed by the author with a qualitative analysis expert and clinical nursing education experts on the open-ended questions, identifying themes based on the respondents' narratives. Innovative teaching strategies described by the respondents were categorized by the author into the SCBTS for adults as developed by Bonk and Kim (1998).

Qualitative analysis. The *pushing exploration and application* category was the most frequently cited for both current use and intent to adopt in the future ($N = 46$). Examples of innovative teaching strategies in this category included strategies such as allowing the students to make their own assignments, being a student charge nurse delegating responsibilities to other students, using concept maps and case scenarios, role playing, use of SimMan (high fidelity simulation manikin developed by the Laerdahl Corporation), taped simulation, and live models, games, and communication vignettes.

The categories that nurse educators reported were most frequently used included managing instruction, directing instruction, and coaching. Examples of strategies currently being used from the above categories included reviewing with students before a procedure, guiding students, and using preceptors with students. The categories that were reported as being used the least included articulating, questioning, and cognitive task structuring. Specific strategies in these categories included post-conference reviews of client care, questioning and articulation, and encouraging verbalization of reasoning and the problem-solving process.

The most frequent categories of innovative, SCBTS that respondents intended to adopt included encouraging exploration and application, reflecting, and self-awareness. Examples of these strategies included reflective journaling and self-evaluation, concept mapping, case studies with emerging strategies with simulation, and critical thinking clinical assignments. All three categories encourage student participation in learning, self-direction, and reflecting upon and evaluating one's learning experiences, which are tenets of SCT.

Quantitative analysis. The demographic data revealed a sample of predominantly Caucasian (65%) middle aged (52%) females (88%) reflecting the national representation of clinical nurse educators. All respondents agreed ($N = 71$) that the stated SCBTS (Bonk & Kim, 1998) were innovative. All respondents agreed that Everett Rogers' (2003) perceived characteristics would be influential on the adoption of future teaching strategies. The top three perceived characteristics which respondents described that would impact their adoption of SCBTS included compatibility, trialability, and relative advantage.

Ancillary quantitative analysis. In comparing the differences between respondents' demographic characteristics and the innovative-decision process rating, results revealed that males ($N = 9$) and Asians ($N = 12$) ($p = .0285$, and $p = .0303$, respectively) rated the perceived characteristics (relative advantage, compatibility, complexity, trialability, and observability) significantly higher than the other respondents.

Discussion

The largest category identified by respondents in both using and intending to adopt innovative teaching strategies was pushing exploration and application. This may signify that SCBTS, as manifest in self-directed learning and application strategies, may be the most appealing aspect in adoption consideration to clinical nurse educators.

Other findings imply that new clinical faculty members agree that Bonk and Kim's (1998) SCBTS were innovative, suggesting that the role of social and cultural environments plays a large part in effective, innovative teaching. Role modeling, encouraging student articulation, and encouraging student exploration were the top three rated characteristics of innovative, SCBTS. This may shed light on the changing roles of clinical instructors who can become facilitators of learning who guide, coach, and

scaffold student knowledge in mutual learning environments, rather than unchallenged experts.

The top three perceived characteristics included compatibility, trialability, and relative advantage. This suggests that the adoption of innovative, SCBTS may be related to whether the strategy is compatible with the educators' teaching philosophy, whether it can be *tried out* before it is used in the clinical setting, and whether it is more advantageous to student learning needs than other teaching strategies. The complexity of an innovation and whether it can be observed before being implemented were less important than the first three variables but were still above average when considering adoption. These findings imply that Everett Rogers' (2003) innovation-decision process can be used to study further the adoption of innovative teaching strategies in clinical nursing education that could build an evidence base upon which nurse educators can draw as they consider using new teaching strategies.

Limitations

Measuring the perceived characteristics of an innovation in Rogers' (2003) model represents only some of the factors that may be related to adoption of innovative, SCBTS since other factors may also contribute, including innovativeness or norms of the social system. Slightly more than half of the respondents had up to two years' experience as clinical nurse educators; consequently, other studies (e.g., the author's dissertation study) with more experienced educators may be more meaningful in measuring adoption of new teaching strategies. The sample from this pilot study may be biased because the educators were enrolled in an online course focusing on clinical education; therefore, they may be more likely to adopt SCBTS.

Conclusions

In this pilot study, innovative, SCBTS in clinical nursing education were based on SCT, which involves more active participation of the learner, and thus may be more conducive to maximal student learning in the clinical setting. This study potentially informs nursing of the changing roles of clinical instructors who can become facilitators of learning who guide, coach, and scaffold student knowledge in mutual learning environments, rather than unchallenged experts. The SCBTS of pushing student exploration and application may signify that self-directed learning and application

strategies may be the most appealing in terms of adoption. The adoption of innovative, SCBTS may be most greatly associated with whether the strategy is compatible with the educators' teaching philosophy (compatibility), whether it can be tried out elsewhere before it is used in the clinical setting (trialability), and whether it is more advantageous to student learning needs than other teaching strategies (relevant advantage).

This pilot study provided a descriptive background for the author who consequently conducted a larger study (i.e., this doctoral dissertation study) of more experienced nurse educators to broaden the sample size for generalizability concerning their adoption of SCBTS based on the perceived characteristics of Everett Rogers' (2003) innovation-decision process. In addition, other means of the participants' educational preparation (e.g., continuing education and certifications in nursing specialties) were included in the analysis to account for further variables relating to adoption of new teaching strategies. Academic organizations' support for innovation was also added to the dissertation study, which possibly offers insight into the development of organizational climates in schools of nursing that may foster needed changes in clinical teaching. The instrument was developed and further refined through the establishment of content validity and reliability in the pilot study. The input from content experts was essential in guiding the item development of the PAAI.

With further research on the adoption of SCBTS the stage may be set for new clinical models that may well be linked to better preparation of nurse graduates, and ultimately, to improved performance of client care in today's complex and ever-changing health care delivery system.

PAAI Study

The purpose of this study was to psychometrically test a proposed instrument, the PAAI, which is specific to the adoption of SCBTS in clinical nursing education (Phillips, 2007b). The PAAI was piloted with a sample of 37 nurse educators recruited from the database of previous course participants of an online course focusing on clinical education in addition to clinical track faculty at Indiana University School of Nursing. Content validity was established with a panel of four experts. Internal consistency reliability was established using Cronbach's coefficient correlations. Descriptive statistics were conducted on survey readability and ease-of-use by respondents.

Background and Significance

There is a dearth of studies in the nursing education literature that measure the adoption of SCBTS. After a thorough search driven by databases including CINAHL, Medline, ERIC, Cochrane Central Register for Controlled Trials, EBSCOhost, Business Source Premier, Proquest Digital Dissertations, and Search.com, this author determined that there is a lack of literature across disciplines containing valid and reliable measurement scales using Everett Rogers' (2003) model. Even among the studies classified as diffusion research, many have not addressed the perceived attributes of an innovation (Oldenburg, Sallis, French, & Owen, 1999), which is what this author intended to do. Across other disciplines such as education, technology, and the social sciences, most instruments were written by the authors and were based on Rogers' model; however, most had not been tested for validity or reliability nor had scales of measurement been developed from the studies.

The topic of the adoption of SCBTS is significant to the discipline of nursing and is in line with present goals of professional nursing organizations such as the NLN to reform nursing education practices needed to prepare nurse graduates to face complex, demanding, and dynamic practice environments. The findings from this research may add to the science of nursing education by providing a psychometrically sound instrument for nurse educators to draw upon as they consider the adoption of new teaching strategies. Future clinical education intervention models may thus be developed for nurse educators to improve clinical nursing education.

Development of the PAAI was based on the work of four valid and reliable author-written scales, which collectively supported the association between innovation perception and innovation adoption, and were adaptable to researching many types of adoption. The Cronbach's alpha coefficients ranged from .71 to .92. The authors of those scales have conceptualized adoption of innovation as a result of the influence of the perceived characteristics of the innovation based on Everett Rogers' (2003) innovation-decision process (Bussey et al., 2000; Isleem, 2003; Pankratz et al., 2002; Steckler et al., 1992).

Variables

Each of Rogers' (2003) perceived characteristics of innovations (relative advantage, compatibility, complexity, trialability, and observability) has been related to the adoption and implementation of the innovation in previous studies in which Rogers' model has served as a framework. There is a paucity of studies in clinical nursing education that use Rogers' model; however, diffusion studies span many disciplines. Diffusion research studies in education and clinical practice offer evidence of similar variables that have been examined, thus providing insight into variables that can be studied in the adoption of innovative teaching strategies in clinical nursing education.

Review of Literature

Adoption of innovations in education. Studies that included the perceived characteristics of innovation in the education literature were reviewed. Only one clinical nursing education study was found that used Rogers' (2003) model for the factors influencing the implementation of innovations in clinical nursing education (Nugent, 1992). The author found that nurse educators in associate degree nursing programs had implemented such teaching innovations as computer-assisted instruction and innovative preceptorship experiences and concluded that each of the perceived characteristics from Rogers' diffusion of innovations model contributed to the adoption of the innovations, although the influence of trialability was negligible. A second study (Ihrke, 2002) examined the educational technology use by nurse educators in Indiana baccalaureate nursing programs and found that nurse educators were more likely to adopt educational technology if the innovation was seen as relatively advantageous and easy to use.

Bussey et al. (2000) studied factors predicting the adoption of technology education in New Mexico public schools. The authors found that the strongest predictor of the level of adoption was the perception of the teacher of the attributes (characteristics) of technology education. The researchers suggested that change agents (people who attempt to make changes) should focus on increasing teacher perceptions of the compatibility, relative advantage, trialability, and observability of technology education and decreasing perceptions of its complexity. Pankratz et al. (2002) measured the faculty perceptions of an innovative federal drug prevention policy (Safe and Drug Free Schools) and determined that relative advantage, compatibility, complexity, and observability were

significantly correlated with the adoption of the federal drug prevention policy. Steckler et al. (1992) measured the diffusion of innovative health promotion programs (tobacco prevention curricula) in school districts in North Carolina and Texas. The researchers determined that administrators and teachers considered relative advantage of an innovation to existing practice, complexity of the innovation, and observability of the effects on students to be influential in the adoption of the tobacco prevention curricula in the schools.

Adoption of innovations in clinical practice. Lee (2004) studied the implementation of electronic care plans in a respiratory care unit by staff nurses and found that all of the characteristics of the innovation (relative advantage, compatibility, complexity, observability, and trialability) influenced the adoption of the care plans by nursing staff. Panzano and Roth (2006) studied the adoption of evidence-based and other innovative mental health practices and concluded that the perceived characteristics of ease-of-use and compatibility of innovative mental health practices in organizations were significant in the implementation of innovative health practices in mental health agencies. Herbert and Benbasat (1994) researched the intent to adopt information technology in hospitals and revealed that intent to use information technology was explained by four variables: (a) beliefs related to relative advantage, (b) beliefs related to compatibility to previous work patterns, (c) result demonstrability (trialability), and (d) subjective norms related to the influence of the senior policy maker, the director of nursing.

Rogers (2003) described the slow adoption of preventive innovations, such as an HIV prevention program, as being the result of individuals having difficulty in perceiving its relative advantage. Rogers also described the importance of compatibility with innovations in a study of the rejection of intrauterine devices for family planning in India, which was incompatible with participants' cultural norms. Rogers suggested that change agents should begin their efforts with an innovation that has a high degree of relative advantage and cultural compatibility to build upon when pioneering a new idea. Aubert and Hamel (2001) measured the adoption of smart cards (micro-processed patient records) in the medical sector and found that relative advantage and compatibility were significantly related to their adoption by medical personnel. Denis et al. (2002) studied the diffusion patterns of complex health care innovations such as the use of low

molecular weight heparin for deep vein thrombosis and the utilization of multiple-use dialysis filters. The researchers concluded that relative advantage, compatibility, complexity, and observability were all factors in the adoption and diffusion of such medical innovations.

Research Design and Methods

Item development process. The PAAI was adapted from four instruments (Bussey et al., 2000; Isleem, 2003; Pankratz et al., 2002; Steckler et al., 1992) specific to the perceived characteristics of an innovation based on Rogers' (2003) innovation-decision process. These instruments addressed the perceived characteristics of an innovation (relative advantage, compatibility, complexity, trialability, and observability) in measuring their influence on adoption. All had satisfactory reliability with Cronbach's alpha coefficients above .70, which is the threshold for reliability (DeVellis, 2003). The innovative teaching strategies were based on Bonk and Kim's (1998) SCBTS for adults.

The design and format of the PAAI instrument were developed to enhance visual appearance and diminish respondent burden, as recommended by Dillman (2000). Questions were written to capture innovative, SCBTS used by the respondents, phrased in ways to provide variability in the responses and to allow respondents to pause and reflect on their answers. Reading level was at the college level since all respondents were college-educated. Skip patterns were inserted to ensure that respondents' time was well managed while completing the survey (Mullin, Lohr, Bresnahan, & McNulty, 2000). Vignettes were used to operationalize the innovative teaching strategies and to allow respondents to respond more objectively, thus reducing social desirability. As previously mentioned, vignettes have been used successfully in past research to measure attitudes, values, beliefs, and abstract concepts, and the response rate is higher than in conventional surveys (Gould, 1996). One open-ended question was offered for those respondents who felt as though their responses were not represented in the questions provided by the survey. The question was developed to be responsive to perceptions of innovative teaching strategies while preventing floor and ceiling effects (Hays & Hadorn, 1992).

Demographic questions were included to measure any variables that could be correlated with Rogers' (2003) perceived characteristics of the innovation (relative advantage, compatibility, complexity, trialability, and observability), which may be

worthy of future research in exploring the adoption of innovative, SCBTS. The open-ended question provided an opportunity for respondents to describe any other innovative teaching strategies they used and what influenced them to be implemented. Questions to capture perceived support for innovation in organizations were selected (with permission from the author; see Appendix C) from the previously established valid and reliable Siegel Scale of Support for Innovation (Brown, 1985; Dee, 1999; Dee et al., 2002; Henkin et al., 1993; Orpen, 1990; Siegel, 1985; Siegel & Kaemmerer, 1978), with Cronbach's alpha coefficients ranging from .86 to .94.

Content validity. Content validity of the PAAI was first reviewed by the author and four experienced clinical nurse expert educators. It was then reviewed by four content experts who provided feedback on the item pool as recommended by Grant and Davis (1997). All four content experts have doctoral degrees, have research experience using Rogers' (2003) diffusion of innovations framework, and are knowledgeable about SCT. The content experts were asked to rate three items for each of the perceived characteristics subscales (relative advantage, compatibility, complexity, trialability, and observability) based on a four-point response scale ranging from 1 (*not relevant*) to 4 (*very relevant*) to the survey constructs. Suggestions were solicited from the content experts for improving the items, and the items were revised based on the suggestions. A content validity index (CVI) of .83 was used as the threshold to measure validity (Lynn, 1986). A reliable item pool was obtained using this process (Polit & Beck, 2006).

Design and sample for pilot testing. A multi-site, multi-method descriptive exploratory design was used to test the PAAI. Participants were (a) clinical nurse educators from around the United States who previously completed an online course focusing on clinical teaching offered by Indiana University School of Nursing, and (b) clinical track faculty from Indiana University School of Nursing. From a recent pilot study previously described (NLN study), it was surmised that the demographic representation of the sample would have a variety of representatives from different ethnic/racial groups, although most would be Caucasian, middle aged, experienced nurse educators, would teach in either associate of science in nursing or bachelor of science in nursing programs, and would be master's prepared.

Procedure

Data was collected for this pilot study from nurse educators from around the United States. Institutional Review Board approval was completed from Indiana University–Purdue University Indianapolis, and there was a letter of invitation delivered by personal e-mail from the researcher using the multiple contact approach described by Dillman (2000). It was assumed that a personal e-mail would be more likely to be opened by potential respondents as a result of the personal nature of the salutation and reply address rather than an e-mail coming from the survey company.

Potential respondents were contacted initially to inform them that a survey was coming to them by e-mail. The letter to participants contained a link to a secure online survey company, SurveyShare.com, where respondents completed the questionnaire. The letter contained information about confidentiality and anonymity. Two follow-up e-mails were sent to those who did not respond, as suggested by Dillman (2000). Funding to offset costs of the dissertation research was awarded by the Indiana University Research Incentive Fellowship to the author. Token financial incentives for potential respondents to complete the survey were implemented (five chances to win a \$25.00 gift certificate to Amazon.com), as suggested by Dillman. The token incentives were delivered by e-mail, in the form of gift certificates from Amazon.com.

Instrumentation

The e-mail cover letter explained the study and anonymity of the participants. The format of the instrument was consistent with the recommendations of Dillman (2000) for Internet surveys. A list of questions appeared on the screen, and respondents were asked to click on the reply function with the computer mouse or to type answers. The items were based on four previously developed valid and reliable instruments (Bussey et al., 2000; Isleem, 2003; Pankratz et al., 2002; Steckler et al., 1992). It was assumed that the use of an Internet survey would be less likely to be affected by social desirability and inhibition than data collected by paper-and-pencil methods (Im & Chee, 2003).

Vignettes were used to describe innovative teaching strategies used in the clinical nursing education setting based on Bonk and Kim's (1998) SCBTS for adults. Vignettes were developed with expert clinical nurses and content experts based on Rogers' (2003) diffusion of innovations framework and Vygotsky's (1978) SCT. Each vignette was

followed by questions about whether the respondent had ever used the strategy. Skip patterns allowed those who had not used the strategy to quickly proceed to the next question, thus reducing respondent burden. Respondents were then asked which of Rogers’ perceived attributes of the innovation were associated with the implementation of the teaching strategy into their education practice. There were 10 vignette-style items for each question based on Bonk and Kim’s (1998) SCBTS. Negatively-worded questions were re-coded and reverse scored.

One open-ended question provided an opportunity for respondents to describe any other innovative teaching strategies which they had implemented and the characteristics that were related to their implementation. A demographic data sheet was used to describe the sample in addition to evaluating any correlations or differences related to responses to the items.

Questions about POS were chosen, with permission from the author (see Appendix C), from the Siegel Scale of Support for Innovation (Siegel, 1985). The three subscales of ownership, leadership, and norms for diversity were chosen to be included in the instrument based on the factor loadings greater than .50. The subscales were also chosen for their parallels to Rogers’ (2003) constructs in the diffusion of innovations model (see Table 3).

Table 3

Parallels between Siegel’s (1985) and Rogers’ (2003) Constructs

Siegel	Rogers
<i>Leadership</i> — organizational leaders’ support for new ideas	<i>Champions</i> — individuals leading innovations within organizations
<i>Ownership</i> — ideas originate from members	<i>Less centralized organizations</i> — leadership shared between members and leadership
<i>Norms for diversity</i> — members’ tolerance	<i>Heterophily</i> — diverse members collectively formulate innovation

Questions about testing items were asked regarding whether (a) the instructions for accessing the survey were clear; (b) the instructions for the items were clear; (c) the items were understandable; (d) the survey was easy to navigate; and (e) how many minutes it took to complete the survey as suggested by Waltz, Strickland, & Lenz (2005).

Data Analysis

Data analysis was performed using the Statistical Package for the Social Sciences, Inc. (v. 14.0) (SPSS). Items were coded, downloaded from the SurveyShare.com responses, saved in a Microsoft Office Excel spreadsheet, and imported into SPSS. Reverse scoring and re-coding was utilized for selected items (negatively-worded questions).

Internal consistency reliability of the items measuring the use of innovative, SCBTS was tested with Cronbach's coefficient correlations (Ferketich, 1991) and computed with SPSS (v. 14.0). Inter-item correlations were computed to determine how well the items related to each other. All items were retained when the item-total statistics revealed that if they were deleted, the Cronbach's alpha would not decrease. Content validity was determined using the CVI (Polit & Beck, 2006) as described previously. Descriptive statistics were conducted on the demographic information and the questions about the survey's readability and ease-of-use.

Results

The content validity showed a value of 1.0, based on the ratings by four content experts in the CVI. A CVI of .83 was used as the threshold to measure validity (Lynn, 1986); therefore, the content validity for the instrument was established.

Internal consistency reliability for the items measuring Rogers' (2003) perceived characteristics of SCBTS revealed a Cronbach's alpha coefficient of .723 (see Table 4). This included all questions related to Rogers' perceived characteristics across the 10 vignettes (the subscales of relative advantage, compatibility, complexity, trialability, and observability). All adoption questions were removed (e.g., "How often have you used this strategy?") from the reliability analysis. The recommended threshold value for reliability is .70 (DeVellis, 2003); therefore, the perceived characteristic items (relative advantage, compatibility, complexity, trialability, and observability) were considered to be reliable.

Table 4

Summary of Reliability for Perceived Characteristics

Subscales	Alpha	Valid Cases	Total Cases	# Items
Relative advantage	.723	27	37	10
Compatibility	.832	33	37	10
Complexity	.492	31	37	10
Trialability	.813	31	37	10
Observability	.675	33	37	10
Overall reliability	.723	27	37	45

Analysis of the POS questions also revealed internal consistency with a Cronbach's alpha coefficient of .787 (see Table 5). The subscales of POS (leadership, ownership, and norms for diversity) are also listed in Table 5.

Table 5

Summary of Reliability for POS

Subscales	Alpha	Valid Cases	Total Cases	# Items
Leadership	.732	27	37	6
Ownership	.294	33	37	2
Norms for Diversity	.393	32	37	3
Overall Reliability	.787	31	37	11

Internal consistency reliability of the adoption questions across the 10 SCBTS (e.g., "How often have you used this strategy?") revealed a Cronbach alpha of .195.

The mean score was 4.06 out of 5.00 on a Likert scale for the questions about the completion of the survey, revealing that 81 percent of the respondents felt that the instructions for accessing the survey were clear, the instructions for the questions were clear, the items were understandable, and the survey was easy to navigate. The mean completion time was 16 minutes for the survey.

Discussion and Conclusions

Based on the pilot study, findings indicated that the PAAI is a valid and reliable instrument for measuring the adoption of SCBTS by clinical nurse educators. Once the content validity was established, the PAAI was revised based on the feedback from the experts and the responses from the pilot study participants. The PAAI was determined to be easy to use by the participants. The time to complete the instrument was reasonable for clinical nurse educators (16 minutes) who most likely have full work schedules. The establishment of content validity, reliability, and ease of use provided the rationale for use of the PAAI for the survey instrument for the author's dissertation study.

In addition, there are no other valid and reliable instruments established in clinical nursing education for measuring the adoption of SCBTS. The psychometric development of the PAAI fills this important research gap and will contribute to the science of nursing education by providing a valid and reliable instrument for measuring the adoption of SCBTS. The PAAI may offer a positive basis for further research aimed at measuring adoption of new teaching strategies in clinical nursing education.

Limitations

The limitations of this study included the use of self-report by respondents, a small sample size, and some respondents having dial-up computer connections, thus needing more time to complete the survey.

Summary of PAAI Study

The purpose of this research study was to develop and psychometrically test the PAAI, which is specific to the adoption of innovative, SCBTS by clinical nurse educators. There is a dearth of literature of what factors influence nurse educators' adoption of innovative teaching strategies, particularly in clinical education. National nursing organizations have issued a call to fully understand this phenomenon; thus, it was critical to develop a psychometrically sound tool to measure adoption of innovative, SCBTS in clinical nurse educators. The PAAI will provide insight into the adoption of innovative, SCBTS, which may be necessary to create an evidence base upon which clinical nurse educators can draw to best prepare nurse graduates for increasingly complex work environments in today's health care system.

Conclusion of Literature Review

This chapter has provided a discussion of the theoretical and empirical literature applicable to this study and of the significance and implications of this study to clinical nursing education. Literature related to the state of the science of clinical nursing education, Rogers' (2003) diffusion of innovations, POS, organizational climate, SCT, and SCBTS used in clinical nursing education was reviewed and critiqued. Gaps in the literature were recognized with respect to this study. Two preliminary studies, the NLN study and the PAAI study, were described, which informed the author of foundational information for this dissertation study.

Guided by the model derived from Everett Rogers' (2003) diffusion of innovations, this study addressed a number of research gaps described above using an exploratory, correlational, descriptive, survey research design from a sample of 486 clinical nurse educators. The sample represented a cross-section of the national population of clinical nurse educators, as determined by the pilot study of the PAAI. Demographic information was solicited from the respondents to determine any correlation with adoption of SCBTS. Each of Rogers' perceived characteristics (relative advantage, compatibility, complexity, trialability, and observability) was listed below each SCBTS and vignette, allowing the participants to weigh the characteristics in terms of how they adopted or rejected the SCBTS. Prior conditions of the norms of the social system were taken into account using parts of the Siegel Scale of Support for Innovation (Siegel, 1985) in organizations, measuring the contextual dimensions of ownership (ideas that originate from members), leadership (leaders' support for new ideas), and norms for diversity (tolerance of innovative members) in adopting SCBTS. One open-ended question allowed respondents to describe any other teaching strategies which they used that were not asked about in the previous items.

Findings from this study explored (a) what SCBTS are reported by clinical nurse educators, (b) what organizational support for innovation is perceived by clinical nurse educators, (c) what perceived characteristics of SCBTS are related to the adoption of SCBTS, (d) what demographic characteristics are related to the adoption of SCBTS, and (e) what relationship exists between POS and adoption of SCBTS.

The next chapter will provide information about the methodology for the study.

CHAPTER THREE

METHODOLOGY

This chapter provides information about the methodology for this dissertation study, exploring the adoption of SCBTS by clinical nurse educators. Included are detailed descriptions of the research design, research questions, hypotheses, population and sample, protection of human subjects, instrumentation, and data analysis. A summary of the overall methodology of the study concludes the chapter.

Research Design

An exploratory, correlational, descriptive, survey research design was used for this study. The purpose of the study was to explore the adoption of SCBTS by clinical nurse educators. An exploration of the adoption of SCBTS may enable the introduction and implementation of organizational interventions to facilitate needed changes in clinical nursing education.

Research Questions

1. What socioculturally-based teaching strategies have been reported by clinical nurse educators?
2. What organizational support for innovation is perceived by nurse educators?
3. What perceived characteristics of the socioculturally-based teaching strategies are related to the adoption of the strategies?
4. What demographic characteristics of clinical nurse educators are related to the adoption of socioculturally-based teaching strategies?
5. What is the relationship between perceived organizational support and adoption of socioculturally-based teaching strategies?

Open-ended Question

Describe any other teaching strategies that you are using in the clinical setting.

Population and Sample

The population consisted of clinical nurse educators teaching in schools of nursing throughout the United States. A convenience sample of all clinical nurse educators who took the online course, "Clinical Faculty: A New Practice Role," between

the years of 2003–2007 from a large, Midwestern university was used for this study, excluding the spring semester of 2007, which was used for the pilot study for the PAAI. The entire sample pool ($N = 486$) was invited to participate, and those who returned the survey constituted the study sample. The number of respondents contacted with current e-mail addresses was 373. There were 99 total respondents, resulting in a response rate of 26 percent. This sample was chosen to provide insight into the perceived characteristics and POS that may play a part in adoption of SCBTS by clinical nurse educators.

Protection of Human Subjects

The study was approved by the Indiana University–Purdue University Indianapolis IRB. As the study constituted survey research, it was exempt from full review by the Indiana University–Purdue University Indianapolis IRB. All participants provided informed consent through the e-mail invitation to the study, which explained the study and provided a link to an electronic survey that populated a secure database. Confidentiality and anonymity were maintained through de-identified data, which were collected through the secure online survey company, SurveyShare.com.

Instrumentation

The cover letter of invitation (see Appendix D) was sent to potential respondents by private e-mail from the investigator since it otherwise might have been screened or deleted by the respondents' computer security systems. The cover letter explained the study in addition to the confidentiality of the survey findings and anonymity of the respondents. Informed consent was implied once the respondents clicked on the survey, which was explained in the invitation e-mail. Data were collected using an online survey developed by the investigator, the PAAI (see Appendix E). The operational definitions for the survey, based on Bonk and Kim's (1998) SCBTS, have been previously described. Two e-mail reminders were sent one week apart to invite all of the potential respondents to complete the survey as recommended by Dillman (2000).

The format of the instrument was consistent with the recommendations of Dillman (2000) for Internet surveys. A list of questions appeared on the screen, and respondents were asked to click on the reply function with the computer mouse or to type answers. It was assumed that the use of an Internet survey would be less likely to be

affected by social desirability and inhibition than data collected by paper-and-pencil methods (Im & Chee, 2003).

A demographic data sheet was used to describe the characteristics of the sample in addition to evaluating any correlations or differences related to responses to the items regarding adoption of SCBTS. Select characteristics of the sample included (a) years practicing as a nurse, (b) years practicing as a clinical educator, (c) working full-time or part-time, (d) total years of teaching, (e) type of nursing program the educator was teaching in, (f) highest level of formal education, (g) professional certification(s) held, (h) when the educator was enrolled in the clinical faculty course, (i) whether the educator had been enrolled in other programs focusing on teaching in nursing, (j) gender, (k) age, and (l) race/ethnicity.

Vignettes were used to describe SCBTS implemented in the clinical nursing education setting based on Bonk and Kim's (1998) SCBTS for adults. Vignettes were developed with expert clinical nurses and content experts on Rogers' (2003) diffusion of innovations model and Vygotsky's (1978) SCT. Each vignette was followed by questions about whether the respondents had ever used the SCBTS. Respondents were then asked which of Rogers' (2003) perceived characteristics (relative advantage, compatibility, complexity, trialability, and observability) of the SCBTS were related to their decision to implement or not to implement the teaching strategy into their individual education practice. There were 10 vignette-style items for each question based on Bonk and Kim's (1998) SCBTS. Skip patterns in the survey allowed for reduced respondent burden (Dillman, 2000).

One open-ended question provided an opportunity for respondents to describe any other innovative teaching strategies which they had implemented and any perceived characteristics that may have influenced their implementation.

Questions to capture perceived support for innovation in organizations were used (with permission) from the Siegel Scale of Support for Innovation (Siegel, 1985; Siegel & Kaemmerer, 1978), thus addressing Rogers' (2003) norms of the social system and their relationship to the adoption of SCBTS. Validity and reliability had been previously established, with Cronbach's alpha coefficients ranging from .86 to .94 (Brown, 1985; Dee, 1999; Dee et al., 2002; Henkin et al., 1993; Orpen, 1990). For this study, the

reliability was established in the pilot study of the PAAI with an acceptable Cronbach's alpha coefficient of .787. Siegel's dimensions of leadership, ownership, and norms for diversity parallel Rogers' norms of the social system in the diffusion of innovations model and were used as independent variables in this study on the adoption of SCBTS by clinical nurse educators.

Data Analysis

Data analysis was performed using the SPSS (v. 16.0). Items were coded, downloaded from the SurveyShare.com responses, saved in a Microsoft Office Excel spreadsheet, and imported into SPSS. Reverse scoring and re-coding were utilized for selected items (negatively-worded questions) for the overall adoption variable (e.g., "How often have you used this strategy?"). Data was screened for missing items, outliers, normality, and linearity to check for violation of statistical assumptions. Cronbach's alpha coefficient was calculated to determine reliability for all subscales (perceived characteristics [relative advantage, compatibility, complexity, trialability, and observability] and POS [leadership, ownership, and norms for diversity]). The following section outlines the data analysis for each research question.

Research Question 1

What socioculturally-based teaching strategies have been reported by clinical nurse educators? Descriptive data analysis was conducted using frequency distributions for each of the SCBTS (modeling, articulation, cognitive task structuring, coaching, scaffolding, managing instruction, reflection, questioning, and DI) (Bonk & Kim, 1998) as measured in the PAAI. This referred to the last question under each vignette, "How often have you used this teaching strategy (e.g., modeling) in your clinical teaching?" followed by the responses of *never*, *sometimes*, *often*, or *always*.

Research Question 2

What organizational support for innovation is perceived by nurse educators? Analyzing the items (items 76–86) used from the Siegel Scale of Support for Innovation (Siegel, 1985) for POS in the PAAI, descriptive statistics were conducted using frequency distributions and mean scores for the total POS items in the PAAI. Frequencies and mean scores for the three subscales of POS (leadership, ownership, and norms for diversity) were also conducted.

Research Question 3

What perceived characteristics of the socioculturally-based teaching strategies are related to the adoption of the strategies? Pearson correlation statistical analyses were conducted on the subscales of relative advantage, complexity, compatibility, trialability, and observability with the adoption score (“How often have you used this strategy?” followed by the responses of *never*, *sometimes*, *often*, or *always*) for *each* of the SCBTS (modeling, articulation, cognitive task structuring, coaching, scaffolding, managing instruction, reflection, questioning, and DI). Pearson correlation statistical analyses were also conducted on the *total* scores for the SCBTS (relative advantage, complexity, compatibility, trialability, and observability) to the overall adoption variable from the PAAI (“How often have you used this strategy?” followed by the responses of *never*, *sometimes*, *often*, or *always*).

Research Question 4

What demographic characteristics of clinical nurse educators are related to the adoption of socioculturally-based teaching strategies? Descriptive statistics were conducted on the demographic data, which were manipulated into dichotomized (e.g., male or female, full-time or part-time employment, and certified or not certified) and categorical variables (e.g., length of time as a registered nurse, length of time teaching, type of program, highest level of formal education, when enrolled in the online course, other types of programs enrolled in, age, and race/ethnicity). Appropriate items were then correlated to the overall adoption variable from the PAAI (“How often have you used this strategy?” followed by the responses of *never*, *sometimes*, *often*, or *always*).

Research Question 5

What is the relationship between POS and adoption of socioculturally-based teaching strategies? Analyzing the items used from the Siegel Scale of Support for Innovation (Siegel, 1985) in the PAAI (items 76–86), Pearson correlations were conducted from the POS items to the total score of the overall adoption variable from the PAAI (“How often have you used this strategy?” followed by the responses of *never*, *sometimes*, *often*, or *always*). Pearson correlations of the three subscales of POS (leadership, ownership, and norms for diversity) were also conducted to the overall adoption variable from the PAAI.

Open-ended Question

The open-ended question, “Describe any other teaching strategies you are using in the clinical setting,” was qualitatively analyzed using content analysis to identify themes from the data. Qualitative content analysis was chosen to analyze the text of the responses through inductive development of categories and deductive application of categories. Qualitative content analysis is “an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytical rules and step by step models without rash quantification” (Mayring, 2000, p. 2). Hsieh and Shannon (2005) define qualitative content analysis as “a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (p. 1227). Denzin and Lincoln (2000) contend that the “word qualitative implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined or measured in terms of quantity, amount, intensity, or frequency” (p. 8). Content analysis was chosen as the method of analysis in order to explore meanings and to identify an emergent theme based on the textual responses of the respondents to the open-ended question. The responses were often short sentences or phrases that did not provide a great deal of detail; therefore, qualitative content analysis was ideal for the data analysis. Qualitative and quantitative research methods combined may increase the potential for further understanding of phenomena (Johnson, Onwuegbuzie, & Turner, 2007), (e.g., the adoption of SCBTS by clinical nurse educators in this study).

In this study, categories were defined to reflect the list of SCBTS identified by Bonk and Kim (1998), which were used to formulate criteria to determine the aspects of the textual material to be taken into account for the content analysis. A systematic text analysis was used to identify primary themes through coding rules (e.g., specific words related to the categories). Words from Bonk and Kim’s (1998) list of SCBTS were matched with words in the open-ended question. For example, the words “modeling” and “models” were used to find teaching strategies for modeling. The word “questioning” was used to find teaching strategies related to questioning. The word “coach” was used to find coaching strategies, and so forth. Teaching strategies matching Bonk and Kim’s definitions were considered to be examples of SCBTS.

Extensions of the categories were defined by the author as enlarging the scope of Bonk and Kim's (1998) definitions of SCBTS. The extensions of the categories were found in words that revealed further examples of Bonk and Kim's SCBTS but were not directly derived from the words in the definition. For example, the words "journal," "diary," and "discussion" were used as coding rules to identify extensions of the articulation category since they consisted of written or verbal expressions of the learning process (from Bonk and Kim's 1998 definitions).

Finally, those teaching strategies that did not fit Bonk and Kim's (1998) definition of SCBTS, and were not considered to be extensions of SCBTS, were considered to be in the "unclassified" category. For example, "clinical simulation lab," "videos," and "games" were considered to be unclassified because they did not fit the definition of Bonk and Kim's (1998) SCBTS nor did they fit into the extensions of the definitions, which were based on the definitions but were not the exact words of the definitions. The categories were carefully revisited, reviewed, and refined concluding in the final categories.

Frequencies of the text citations for each category were conducted and examples of each response for that category were reviewed. The categories were then analyzed using frequencies of the coded categories, and conclusions were drawn based on the frequencies, categories, textual examination, and the extension of some of the SCBTS by the respondents.

Summary of Methodology

An exploratory, correlational, descriptive, survey research design was conducted to achieve the aims of this study. Although national nursing organizations have called for reform and innovation in nursing education, no studies have been published concerning the factors related to nurse educators' adoption of such changes. The use of SCT (Vygotsky, 1978) was used to provide a salient theoretical underpinning to the study because it may better meet the needs of today's learners. The use of SCBTS (Bonk & Kim, 1998) may be more conducive to the foundations of contemporary pedagogy in clinical nursing where today's nurse graduates must think about each complex practice situation in order to deliver individualistic, competent, holistic care (Peters, 2000; Sanders & Welk, 2005). Everett Rogers' (2003) diffusion of innovations model was used

as the theoretical framework to explain what perceived characteristics are present when nurse educators consider adopting SCBTS. This study focused on the exploration of the adoption of SCBTS and POS by clinical nurse educators and may provide further evidence and support for implications regarding future clinical models and interventions at the organizational level regarding the adoption of needed changes in clinical nursing education.

CHAPTER FOUR

RESULTS

The purpose of this study was to explore the adoption of SCBTS, using Rogers' (2003) diffusion of innovations model, reported by clinical nurse educators. The relationship of the following variables were explored and analyzed in relation to the adoption of SCBTS: (a) clinical nurse educators' perceived characteristics of SCBTS (relative advantage, compatibility, complexity, trialability, and observability); (b) clinical nurse educators' POS (leadership, ownership, and norms for diversity); and (c) selected demographic characteristics.

The research questions tested in this study were:

1. What socioculturally-based teaching strategies have been reported by clinical nurse educators?
2. What organizational support for innovation is perceived by nurse educators?
3. What perceived characteristics of the socioculturally-based teaching strategies are related to the adoption of the strategies?
4. What demographic characteristics of clinical nurse educators are related to the adoption of socioculturally-based teaching strategies?
5. What is the relationship between perceived organizational support and adoption of socioculturally-based teaching strategies?

In addition, one open-ended question asked the respondents to describe any other teaching strategies that they were using in the clinical setting.

Instrument Reliability and Validity

Internal reliability was tested for (a) subscales of perceived characteristics of the SCBTS (relative advantage, compatibility, complexity, trialability, and observability); (b) the overall adoption variable; and (c) the POS subscales (leadership, ownership, and norms for diversity) (see Table 6). All but one subscale resulted in a Cronbach alpha of .70 or greater, with ownership resulting in a Cronbach alpha of .69, which is considered acceptable (DeVellis, 2003).

Table 6

Summary of Subscales

Subscales	Alpha	Valid Cases	Total Cases	# Items
Relative Advantage	.778	84	94	10
Compatibility	.692	84	94	10
Complexity	.764	83	95	10
Trialability	.838	84	95	10
Observability	.895	88	95	10
Overall Perceived Characteristics	.738	70	95	50
Overall Adoption Variables	.707	90	95	10
Leadership	.893	90	95	6
Ownership	.694	94	95	2
Norms for Diversity	.891	91	95	3
Overall POS	.943	87	95	11

Validity was established in the pilot study of the PAAI as described previously in Chapter Two, resulting in a CVI = 1.0, based on the ratings by four content experts in the content validity index. A content validity index of .83 was used as the threshold to measure validity (Polit & Beck, 2006); therefore, the content validity for the instrument was previously established. No further validity testing was conducted.

Sample Demographics

A sample pool of clinical nurse educators from around the United States ($N = 486$), who were enrolled in the online course, “Clinical Faculty: A New Practice Role,” between 2003–2007, was invited to complete the PAAI. The number of respondents reached with current e-mail addresses was 373. The total number of respondents was 99, resulting in a response rate of 26 percent.

Four respondents worked exclusively as staff development educators in a health care setting; their responses were removed from the database once it was determined that they did not meet the inclusion criteria. Eighty-nine percent of the respondents had been employed as clinical faculty members within the past 12 months. Most were 51 years of age or older (58%), had been a nurse for more than 20 years (72%), worked full-time

(70%), held masters of science in nursing degrees (79%), were female (96%), and Caucasian (89%). Nineteen percent had been nurse educators for at least two years, with the majority teaching in the clinical setting three years or more (81%). Sixty-three percent taught in non-bachelor of science in nursing (BSN) programs, while the remaining 37 percent taught in BSN programs. Most of the respondents had taken the “Clinical Faculty” course within the previous three years (59%). In the previous five years, respondents had enrolled in a variety of continuing education offerings including workshops, continuing education classes, nurse educator preparatory classes, and graduate-level course work (see Table 7).

Table 7

Demographic Characteristics of Clinical Nurse Educators

Demographic	Frequency (N = 95)	Percent
Works in Staff Development Exclusively		
Yes	4	4
No	95	96
Clinical Educator in Past 12 Months		
No	10	11
Yes	85	89
Years as RN		
3–5 years	2	2
6–10 years	3	3
11–20 years	22	23
>20 years	68	72
Years in all Faculty Positions		
0–2 years	17	18
3–5 years	37	39
6–10 years	17	18
11–20 years	18	19
>20 years	6	6

(table continues)

Demographic	Frequency (<i>N</i> = 95)	Percent
Years as Clinical Educator		
0–2 years	18	19
3–5 years	35	37
6–10 years	19	20
11–20 years	18	19
>20 years	5	5
Work Full-time or Part-time		
Full-time	65	70
Part-time	28	30
Type of Program Teaching In		
RN Diploma	8	8.5
RN Associate	30	32.0
BSN Generic	27	29.0
BSN Accelerated or 2nd Degree	8	8.5
LPN (licensed practical nurse)	14	15.0
Other	7	7.0
Highest Level of Education		
RN Associate	1	1
BSN	14	15
MSN	75	79
Master's in other field	3	3
Doctorate in other field	2	2
Certificate in Nursing Specialty		
Yes	38	41
No	54	57
Other	2	2
Took Clinical Faculty Course		
2003	5	5
2004	12	13

(table continues)

Demographic	Frequency (<i>N</i> = 95)	Percent
2005	16	17
2006	16	17
2007	23	25
Not Sure	21	23
Gender		
Female	90	96
Male	5	5
Age		
21–30	2	2
31–40	4	4
41–50	34	36
51–60	46	49
>60	8	9
Ethnicity		
African American	4	4
Caucasian	83	89
Hispanic	4	4
Native American	2	2
Other	1	1
Continuing Education in Teaching		
Workshops	7	7
Continuing Education Classes	24	24
Nurse Education Prep Courses	10	10
Certificate in Nursing Education	7	7
Graduate Course Work	20	20
Combination of the Above	25	25
None	6	6

Note. Four respondents were deleted from analysis due to exclusion criteria.

Research Questions

Research Question 1

What socioculturally-based teaching strategies have been reported by clinical nurse educators? Descriptive data analysis was conducted for each of the SCBTS (modeling, articulation, cognitive task structuring, coaching, scaffolding, managing instruction, reflection, questioning, and DI) (Bonk & Kim, 1998) as measured in the PAAI (see Table 8). This refers to the last question under each vignette, “How often have you used this teaching strategy (e.g., modeling) in your clinical teaching?” followed by the responses of *never*, *sometimes*, *often*, or *always*. Frequency distributions for each of the SCBTS can be found in Appendix G. The minimum and maximum scores ranged from 1 (*strongly disagree*) to 4 (*strongly agree*), respectively.

The SCBTS most frequently reported are listed in Table 8 in descending order. The overall adoption variable mean for the ten SCBTS was 2.8 on a 4.0 scale ($SD = .458$, $N = 94$) indicating an adoption mean slightly above the mid-point of the range with little variance in the overall mean scores. The N in the tables in this chapter signifies the number of people who answered the survey question.

Table 8

Descriptive Statistics for Adoption of SCBTS Items.

SCBTS	N	Mean	SD
Articulation	94	3.53	0.667
Coaching	94	3.35	0.839
DI	94	3.23	0.795
Scaffolding	93	3.04	0.884
Modeling	94	2.97	0.909
Managing Instruction	93	2.84	0.789
Questioning	93	2.65	1.018
Reflection	94	2.56	1.178
Cognitive Task Structuring	93	2.39	1.000
Exploration	93	1.61	0.723
Overall Adoption Mean SCBTS	94	2.82	0.458

Research Question 2

What organizational support for innovation is perceived by nurse educators?

Using the items from the Siegel Scale of Support for Innovation for POS (Siegel, 1985), descriptive statistics were conducted using frequency distributions and mean scores for the total POS items (see Table 9). The overall POS mean was 2.82 on a 4.00 scale ($SD = .458, N = 94$) indicating a mean slightly above the mid-point of the range with little variance in the overall mean scores.

Frequencies and mean scores for the three subscales of POS (leadership [L], ownership [O], and norms for diversity [N]) were also conducted (see Table 10). The frequency distribution tables for the POS scores may be found in Appendix G. Ten of the 11 mean scores for the POS subscales of leadership, ownership of new ideas, and norms for diversity within their organizations were slightly above the mid-point of the range with little variance in the overall mean scores. Four of the mean scores were above 3.0. The overall POS score was slightly above the mid-range ($M = 2.82, SD = .458$). The minimum and maximum scores ranged from 1 (*strongly disagree*) to 4 (*strongly agree*) respectively.

Table 9

Descriptive Statistics for POS Items.

POS	<i>N</i>	Mean	<i>SD</i>
My ability to function creatively is respected by leadership (L)	94	3.09	.682
The role of leader in this organization can best be described as supportive (L)	93	3.03	.714
Creativity is encouraged here (N)	92	3.01	.671
The leadership acts as if we are not very creative (L)	91	3.00	.632
Around here people are allowed to try to solve the same problem in different ways (N)	94	2.97	.695
Creative efforts are usually ignored here (N)	93	2.89	.589
People here try new approaches to tasks, as well as tried and true ones (O)	94	2.87	.553
I mostly agree with how we do things here (O)	94	2.86	.598

(table continues)

POS	<i>N</i>	Mean	<i>SD</i>
Individual independence is encouraged in this organization (L)	94	2.69	.598
Assistance in developing new ideas is readily available (L)	93	2.63	.749
People in this organization are encouraged to develop their own interests, even when they deviate from those of the organization (L)	93	2.44	.729
Overall POS mean	94	2.82	.458

Note. L = Leadership, O = Ownership, N = Norms for Diversity

Table 10

Descriptive Statistics for POS Subscales

POS Subscale	<i>N</i>	Mean	<i>SD</i>
Norms for Diversity	94	2.95	.589
Ownership	94	2.87	.504
Leadership	94	2.82	.568

Research Question 3

What perceived characteristics of the socioculturally-based teaching strategies are related to the adoption of the strategies? Pearson correlation analyses were conducted on the subscales of relative advantage, complexity, compatibility, trialability, and observability to the adoption score (“How often have you used this strategy?” followed by the responses of *never, sometimes, often, or always*) for *each* of the SCBTS, (modeling, articulation, cognitive task structuring, coaching, scaffolding, managing instruction, reflection, questioning, and DI). Pearson correlation analyses were also conducted on the *total* scores for the subscales of SCBTS (relative advantage, complexity, compatibility, trialability, and observability) to the overall adoption variable from the PAAI (“How often have you used this strategy?” followed by the responses of *never, sometimes, often, or always*).

There was a significant positive linear relationship found between the perceived characteristic of relative advantage and the following SCBTS: (a) modeling, (b) cognitive task structuring, (c) coaching, (d) scaffolding, (e) managing instruction, (f) reflection,

(g) exploration, and (h) questioning. This indicated that the higher the perceived relative advantage, the greater the adoption of the above SCBTS (see Table 11). The findings show that the higher the perceived relative advantage, the greater the adoption of the above SCBTS. There was a strong relationship between perceived relative advantage and adoption of the above SCBTS, which all were significantly correlated.

The coefficient of determination ranged from 4.5 percent ($r^2 = .045, p = .115$) to 13.5 percent ($r^2 = .135, p = .000$); therefore, up to 13.5 percent of the variance in adoption can be explained by the perceived relative advantage of the SCBTS (see Table 11). There was no significant relationship found between perceived relative advantage and the SCBTS of DI and articulation.

Table 11

Correlation between Perceived Relative Advantage and Adoption of each SCBTS

SCBTS	<i>N</i>	<i>r</i>	<i>r</i> ²	<i>p</i>
Questioning	91	.368**	.135	.000
Reflection	94	.351**	.123	.001
Managing Instruction	93	.303**	.091	.003
Modeling	93	.281**	.079	.006
Cognitive Task Structuring	93	.279**	.078	.007
Scaffolding	91	.243*	.059	.020
Coaching	93	.233**	.054	.024
Exploration	92	.214*	.045	.040
DI	94	.200	.040	.054
Articulation	93	.164	.027	.115

* $p < .05$, ** $p < .01$

There was a significant positive linear relationship between perceived compatibility and the adoption of each of the SCBTS (see Table 12). The findings show that the higher the perceived compatibility, the greater the adoption of all SCBTS. There was a strong relationship between perceived compatibility and adoption of SCBTS,

which all are significantly correlated. The coefficient of determination ranged from 12.6 percent ($r^2 = .126, p = .000$) to 89.1 percent ($r^2 = .891, p = .000$); therefore, up to 89.1 percent of the variance in adoption can be explained by perceived compatibility of a specific SCBTS.

Table 12

Correlation between Perceived Compatibility and Adoption of each SCBTS

SCBTS	<i>N</i>	<i>r</i>	<i>r</i> ²	<i>p</i>
Cognitive Task Structuring	93	.944**	.891	.000
Reflection	94	.761**	.579	.000
DI	92	.673**	.452	.000
Questioning	94	.669**	.447	.000
Managing Instruction	92	.669**	.447	.000
Exploration	92	.657**	.431	.000
Scaffolding	93	.621**	.385	.000
Articulation	94	.545**	.297	.000
Modeling	94	.511**	.261	.000
Coaching	94	.355**	.126	.000

** $p < .01$

There was a significant negative linear relationship between perceived complexity and the adoption of each of the SCBTS (see Table 13). The findings show that the higher the complexity, the less the adoption of all SCBTS. There is a strong relationship between perceived complexity and adoption of the SCBTS, which all are significantly negatively correlated. The coefficient of determination ranged from 6.1 percent ($r^2 = .061, p = .017$) to 42.2 percent ($r^2 = .422, p = .000$); therefore, up to 42.2 percent of the variance in adoption can be explained by the perceived complexity of a specific SCBTS.

Table 13

Correlation between Perceived Complexity and Adoption of each SCBTS

SCBTS	<i>N</i>	<i>r</i>	<i>r</i> ²	<i>p</i>
Reflection	94	-.650**	.422	.000
Managing Instruction	91	-.552**	.304	.000
Scaffolding	92	-.548**	.300	.000
Questioning	90	-.537**	.288	.000
Articulation	93	-.522**	.272	.000
Cognitive Task Structuring	90	-.489**	.237	.000
Modeling	91	-.478**	.228	.000
Exploration	93	-.453**	.205	.000
DI	94	-.404**	.163	.000
Coaching	93	-.248*	.061	.017

* $p < .05$, ** $p < .01$

There was a significant negative linear relationship between perceived trialability and the adoption of each of the SCBTS (see Table 14). The findings show that the greater the trialability, the less the adoption of all SCBTS. There was a strong relationship between perceived trialability and adoption of the SCBTS, which all were significantly negatively correlated. The coefficient of determination ranged from 9.1 percent ($r^2 = .091$, $p = .003$) to 44 percent ($r^2 = .440$, $p = .000$); therefore, up to 44 percent of the variance in adoption can be explained by the perceived trialability of a specific SCBTS.

Table 14

Correlation between Perceived Trialability and Adoption of each SCBTS

SCBTS	<i>N</i>	<i>r</i>	<i>r</i> ²	<i>p</i>
Questioning	92	-.664**	.440	.000
Exploration	92	-.639**	.408	.000
Reflection	93	-.595**	.354	.000
Modeling	91	-.570**	.324	.000
DI	92	-.566**	.320	.000
Cognitive Task Structuring	94	-.564**	.318	.000
Managing Instruction	90	-.419**	.175	.000
Scaffolding	90	-.411**	.169	.000
Articulation	92	-.329**	.108	.001
Coaching	93	-.302**	.091	.003

***p* < .01

There was a significant negative linear relationship between perceived observability and the adoption of each of the SCBTS (see Table 15). The findings show that the greater the observability, the less the adoption of all SCBTS. There was a strong relationship between observability and adoption of the SCBTS, which all were significantly negatively correlated. The coefficient of determination ranged from 4.9 percent ($r^2 = .049$, $p = .031$) to 39.9 percent ($r^2 = .399$, $p = .000$); therefore, up to 39.9 percent of the variance in adoption can be explained by perceived observability of a specific SCBTS.

Table 15

Correlation between Perceived Observability and Adoption of each SCBTS

<i>SCBTS</i>	<i>N</i>	<i>r</i>	<i>r</i> ²	<i>p</i>
Modeling	93	-.632**	.399	.000
DI	92	-.589**	.346	.000
Reflection	93	-.506**	.256	.000
Questioning	93	-.504**	.254	.000
Exploration	92	-.501**	.251	.000
Scaffolding	90	-.411**	.169	.000
Cognitive Task Structuring	93	-.402**	.162	.000
Articulation	93	-.343**	.117	.000
Managing Instruction	91	-.334**	.111	.001
Coaching	93	-.223*	.049	.031

* $p < .05$, ** $p < .01$

There was a significant positive linear relationship between the overall perceived characteristics of relative advantage and compatibility and the overall adoption score. The negatively-worded questions were reverse scored and re-coded. The findings showed that the higher the relative advantage and compatibility, the greater the adoption of the SCBTS. There was a significant negative linear relationship between the perceived characteristics of complexity, trialability, and observability and the overall adoption score. The findings showed that the more perceived complexity, trialability, and observability, the less adoption of the SCBTS. There was a strong relationship between the perceived characteristics and the adoption of all of the SCBTS, which all are significantly correlated. The coefficient of determination ranged from 8.29 percent ($r^2 = .082$, $p = .005$) to 44.5 percent ($r^2 = .445$, $p = .000$); therefore, up to 44.5 percent of the variance in adoption can be explained by the perceived characteristics of the overall adoption of SCBTS (see Table 16).

Table 16

Correlation between Perceived Characteristics and the Overall Adoption of SCBTS

Perceived Characteristics	<i>N</i>	<i>r</i>	<i>r</i> ²	<i>p</i>
Compatibility	94	.667**	.445	.000
Complexity	94	-.556**	.309	.000
Trialability	94	-.533**	.284	.000
Observability	94	-.521**	.271	.000
Relative Advantage	94	.287**	.082	.005

***p* < .01*Research Question 4*

What demographic characteristics of clinical nurse educators are related to the adoption of socioculturally-based teaching strategies? Descriptive statistics were conducted on selected demographic data (see Table 17), which were manipulated into categorical variables as follows: (a) years of clinical teaching experience (1 = <5 years, 2 = >5 years); (b) certificates in nursing specialty (1 = no certificate, 2 = yes certificate); type of program (1 = non-BSN program, 2 = BSN program); and age (1 = <50 years, 2 = >50 years). Items were selected based on the relative importance of the item to adoption of the SCBTS. Items were correlated to the overall adoption variable (“How often have you used this strategy?” followed by the responses of *never*, *sometimes*, *often*, or *always*) using point-biserial correlation.

Greater experience as a clinical educator was significantly associated with higher adoption of SCBTS, while less experience as a clinical educator was associated with less adoption of SCBTS ($r = .272, p = .008$). There was no relationship found between holding certificates in a nursing specialty, type of program, or age and the adoption of SCBTS (see Table 17).

Table 17

Point-biserial Correlation between Selected Demographics and Adoption of SCBTS

Demographic	<i>N</i>	<i>r</i>	<i>p</i>
Years of Clinical Education Experience	94	.272**	.008
Certificates in Nursing Specialty	91	.023	.828
Type of Program	87	.016	.881
Age	93	-.019	.855

***p* < .01*Research Question 5*

What is the relationship between perceived organizational support and adoption of socioculturally-based teaching strategies? Analyzing the items used from the Siegel Scale of Support for Innovation (Siegel, 1985) (items 76–86), Pearson correlations were conducted between the mean scores of the POS items and the mean scores of the overall adoption variable from the PAAI (“How often have you used this strategy?” followed by the responses of *never*, *sometimes*, *often*, or *always*). Pearson correlations of the mean scores of the three subscales of POS (leadership, ownership, and norms for diversity) were also conducted to the mean scores of the overall adoption variable from the PAAI. There was no relationship found between the POS items and the overall adoption variable (see Table 18).

Table 18

Correlations between POS Items and Overall Adoption Variable

POS Item	<i>N</i>	<i>r</i>	<i>p</i>
My ability to function creatively is respected by leadership (L)	94	-.036	.730
The role of leader in this organization can best be described as supportive (L)	93	-.081	.442
Creativity is encouraged here (N)	92	-.052	.625
The leadership acts as if we are not very creative (L)	91	-.043	.683
Around here people are allowed to try to solve the same problem in different ways (N)	94	.032	.757

(table continues)

POS Item	<i>N</i>	<i>r</i>	<i>p</i>
Creative efforts are usually ignored here (N)	93	-.119	.255
People here try new approaches to tasks, as well as tried and true ones (O)	94	.065	.535
I mostly agree with how we do things here (O)	94	-.061	.560
Individual independence is encouraged in this organization (L)	94	-.123	.237
Assistance in developing new ideas is readily available (L)	93	.034	.750
People in this organization are encouraged to develop their own interests, even when they deviate from those of the organization (L)	93	-.110	.292

Note. L = Leadership, O = Ownership, N = Norms for Diversity

There was no relationship found between the sub-scales of perceived leadership, ownership, norms for diversity, or the overall POS and the adoption of SCBTS (see Table 19). Negatively worded questions were reverse scored and re-coded.

Table 19

Correlations between POS Sub-scales and Overall Adoption Variable

POS	<i>N</i>	<i>r</i>	<i>p</i>
Leadership	94	-.075	.470
Ownership	94	.000	.996
Norms for Diversity	94	-.096	.360
Overall POS	94	-.065	.535

Open-ended Question

Findings

The open-ended question that was asked of each respondent was, “Describe any other teaching strategies you are using in the clinical setting.” Respondents typed answers in the designated space on the survey.

Sixty-two respondents answered the open-ended question. Eighty responses were counted (more than one response was entered for most respondents). When a respondent made references to more than one category, they were coded and counted, and are reported in Tables 20, 21, and 22. Twenty-five teaching strategies listed by respondents

were found to be examples of the ten SCBTS, and some were seen as an extension of the SCBTS (see Tables 20 and 21) according to the definitions from Bonk and Kim (1998). The remaining teaching strategies were listed as unclassified teaching strategies used in the clinical setting (see Table 22). The most frequently reported SCBTS were articulation (21.25%), modeling (16.25%), and exploration (13.75%). The unclassified strategies constituted 25 percent of the total strategies reported.

Table 20

Frequencies of Teaching Strategies by SCBTS Category

Category	Extension	Frequency	Percentage
Articulation		5	6.00
	Peer Teaching	6	7.50
	Presentations	3	3.75
	Story-telling	3	3.75
Modeling		5	6.00
	Role Play	7	8.75
	Role Challenges	1	1.25
Exploration		1	1.25
	Maps	7	8.75
	Webs	3	3.75
Scaffolding and Fading		4	5.00
Questioning		3	3.75
	Flash Cards	2	2.50
Coaching		2	2.50
Reflection		2	2.50
DI		2	2.50
Managing Instruction		1	1.25
Cognitive Task Structuring		0	0.00

Table 21

Total Frequencies of SCBTS and Extensions

Category	Frequency	Percentage
Total SCBTS	25	31.25
Total Extensions	32	40.00
Total SCBTS and Extensions	57	71.25

Table 22

Frequencies of Unclassified Teaching Strategies by Category

Category	Frequency	Percentage
Case Studies	8	10.00
Clinical Simulation Lab	4	5.00
Videos	3	3.75
Games	2	2.50
Physical Models	1	1.25
Quizzes	1	1.25
Problem-based Learning	1	1.25
Total Unclassified Teaching Strategies	20	25.00

The author's intent was for the respondents to answer *other* teaching strategies they were using to be *other than the SCBTS*. However, a majority of the responses (71.25%) included strategies the author considered to be SCBTS or an extension of them according to the definitions of Bonk and Kim (1998). It is unclear whether respondents understood these examples to be based on SCT or not.

The articulation category, which pertained to the definition "to encourage verbal or written expression of learners' problem-solving process" (Bonk & Kim, 1998, p. 9), had the largest percentage of responses (21.25%). Examples included the following: (a) "Verbal rehearsal. Student describes how he plans to approach the situation prior to entering the room"; (b) "Diary Writing - Instructions: Write your feelings about your day. Write your observations of events around you. Write about what could have made this experience more beneficial for you."

Peer teaching, presentations, and story-telling were determined to be extensions of articulation because the definition encompasses the strategies. Students learn from peers through their verbal or written expression of problem-solving. Students also learn from the clinical educators' verbal expression of story-telling of past experiences of problem-solving case studies. Examples of the extension of articulation included the following: (a) "Peer teaching is very effective, because learners can frequently anticipate what their peer learner needs more readily than the instructor. It is also a wonderful teaching tool for the instructor to evaluate more than one student at a time"; (b) "Having students find research articles related to patients they have cared for and presenting them to the group, associating what they have discovered to their patient care"; (c) "The use of experiential teaching-learning Story-telling Case Studies."

The modeling category, which pertained to the definition "to illustrate performance standards and verbalize internal processes" (Bonk & Kim, 1998, p. 9), was second in percentage of responses (16.25%). Examples included the following: (a) "I role model on the unit by talking to clients and staff"; (b) "Modeling, demonstration/return demonstration."

Role playing and role challenging were determined to be extensions of the modeling category because they fit the definition developed by Bonk and Kim (1998). Students model professional behavior through observing other students role play or by embracing challenging roles. Examples included the following: (a) "Role play; especially in conference or even take student(s) aside for a moment to play through patient approaches or clinical techniques before going to bedside. Pull them off the unit, into an empty room and have a mini-skills lab for a few hours to get them over their fears of hurting or doing something wrong"; (b) "Role Challenges- place student in charge or supervisory role with specific duties in addition to regular clinical assignments."

Exploration, according to the definition developed by Bonk and Kim (1998) "to push student examination and application of independent problem-solving skills" (p. 9), was the third most reported SCBTS (13.75%). One example of the use of liberal arts to explore nursing and solve problems was, "I try to include art and literature in my classes as well as focusing on political and economics of health care through different activities." As previously discussed, the use of liberal arts and creativity in teaching as students

examine and apply problem-solving skills is considered to be an exploratory teaching strategy (Jackson & Sullivan, 1999; Kalischuk & Thorpe, 2002; Wang et al., 2004).

Maps and webs were considered to be extensions of the exploration category because they fit the definition developed by Bonk and Kim (1998). Maps included care maps and concept maps, while webs included clinical reasoning webs and interactive Web sites. Students learn to examine and apply independent problem-solving skills through these teaching strategies. Examples included the following: (a) “I use concept mapping to assist the students in connecting the ‘dots’ in client care”; (b) “Utilizing a nursing web to formulate nursing plan of care specific for the patient with organizing priorities in plan of care”; (c) “I use clinical webs to foster critical thinking and use of the nursing process.”

Scaffolding and fading, defined as “support what learners cannot yet do and gradually remove that support as competence is displayed” (Bonk & Kim, 1998, p. 9), was profoundly exemplified by the comment, “The clinical inpatient time for us is a time the students expand their wings and we don't hover over them but under them like the mother eagles. I watch from afar as they develop. I prepare and they fly forth. And we swoop under when needed.” Clinical educators encourage student learning by watching from afar and helping them when needed. This was the most exemplary text found on the use of sociocultural theory in the clinical setting that was identified from the responses in that it captured the essence of SCT.

Questioning, defined as requesting “verbal responses from learners by supporting them with mental functions they cannot produce alone” (Bonk & Kim, 1998, p. 9), was best exemplified by the following comments: (a) “Sometimes I ask the students to fill in the blanks. I will ask them questions and provide some part of the answer and they will provide whatever I left out”; (b) “Multiple questioning lines to improve critical thinking for example a student is in a room hanging an IV of normal saline: I ask the student ‘what are you doing’ they respond hanging an IV—I ask them why, they say because the doctor ordered it, I ask them why—because the client has dehydration—I ask them why hang IV fluid on a person with dehydration, they say because they need fluid, I say ‘why’ they say the person is septic, I say ‘why are they septic’—because they have bacteria in the blood stream ‘why do they have bacteria in their bloodstream?’—I keep asking until they have

to go look something up—this gives them the opportunity to understand the rationales and the critical thinking involved to get them to ‘hanging the IV’ I call it the 20 questions approach.”

Flash cards were included in the questioning category because their use requires verbal responses while supporting learners with answers they may not be able to produce alone. An example of the use of flash cards was as follows: “Flash cards with specific questions related to important concepts frequently seen on that particular unit. Also depends on the level of the student. I do not use the same strategies for a 1st year than for a senior.”

Coaching is defined as “[observing and supervising] students in guiding them toward expert performance” (Bonk & Kim, 1998, p. 9). Examples from respondents who guided performance included: (a) “Allow more proficient students to coach other students in actual performance of skills, such as dressing changes”; (b) “Discussing multiple techniques observed as they watch nurses do the same procedures differently and coach them to explore principles kept or violated among various nursing personnel and the implications for the patient.”

Reflection fosters “student problem-solving processes through comparison of learners’ practice with previous practice or with the practice of expert practitioners or other learners” (Bonk & Kim, 1998, p. 9). Respondents identified reflection through the following comments: (a) “I use a lot of reflective activities in teaching”; (b) “Reflective journaling, self-evaluation.”

Direct instruction assists “learning through instructor-led lessons, with practice and feedback to provide clarity, needed content and missing information” (Bonk & Kim, 1998, p. 9). Nurse educators use DI through lessons led by specialized instructors as seen in the following comments: (a) “Consultation with a specialist (have the student speak with an expert about care issues—encourages gathering evidence)”; (b) “Sometimes have speakers come and present post conference—example have respiratory therapy come to post conference and review various types of O2 therapies.”

Managing instruction assists “learning through performance feedback and positive reinforcement” (Bonk & Kim, 1998, p. 9). One nurse educator emphasized feedback and

positive reinforcement through the following remark, “Discussion [with] positive reinforcement.”

There were no comments regarding the SCBTS of cognitive task structuring, defined as “[explaining and organizing] a task within the learners’ zone of proximal development” (Bonk & Kim, 1998, p. 9). There were no references to explaining or organizing tasks in the text of the responses to the question.

The category of unclassified teaching strategies used by clinical educators in the clinical setting included the use of case studies, clinical simulation lab, videos, physical models, games, quizzes, and problem-based learning. One respondent explained the use of case studies as “case studies done in small groups.” The clinical simulation lab example from the text of the responses stated that “students work as team members in the simulation lab.” Comments about videos included: (a) “Inservice new devices or procedures with facility's videos/materials in post conference”; (b) “We analyze videos of mentally ill clients to practice assessment, care planning and discussing the illness as a group before starting clinical—like a mental health simulation lab.” Physical models were described in combination with other teaching strategies in this comment: “I use physical models from everyday life to relate concepts of physiology to disease processes. I combine that with concept mapping to help them understand the relationships between the physiology and the manifestation of signs and symptoms. I draw illustrations to reinforce verbal explanations. I use analogies to contrast and compare.” Games were described by one respondent in this manner: “I use a lot of gaming that I found in a nursing education book. I can't credit the author because I don't have the book here in my office. A jigsaw puzzle that asks students to use the nursing process to treat wounds. A picture of a patient room for which the students have to draw all of the things that are visual tactile, or auditory disturbances to the patient. A stick figure of a patient with pictures loosely illustrating symptoms. The students have to use the nursing process to treat the response to illness, and come up with a likely medical [diagnosis].” Another respondent stated that “We also play medication and defense mechanism games.” Quizzes were described as “NCLEX Quiz/math quiz in post conference.” Problem-based learning was described simply as “Problem based learning scenarios.”

Content Analysis of Findings

The emergent theme of the qualitative content analysis identified was that there were a variety of teaching strategies used by clinical nurse educators based on matching words (e.g., modeling, coaching, and reflection) from Bonk and Kim's (1998) list of SCBTS. In addition, examples of the SCBTS, considered to be extensions, based on Bonk and Kim's (1998) definitions were listed. For example, articulation was extended to include peer teaching, presentations, story-telling, and peer teaching.

The teaching strategies listed as unclassified teaching strategies (not extensions of SCBTS) show a variety of approaches. Strategies included such things as videos, games, quizzes and voice-over electronic presentations. Case studies were listed; however it was difficult to determine whether they were the same as story-telling since they simply listed the word "case studies." It was unclear how the unclassified teaching strategies were used and consequently difficult to draw conclusions about their relationship to SCT.

Taking a critical look at the teaching strategies from the respondents in the study, one must consider that Bonk and Kim's definitions of SCBTS (1998), based in assisted learning and cognitive apprenticeship, may not entirely describe whether SCT is being used to teach adults. This is problematic and may require further development of teaching strategies based on SCT. Sociocultural theory contends that successful adult learning takes into account the complexity of social, cultural, contextual, and institutional interactions, thus allowing the learners to take responsibility for their own learning (Bonk & Kim, 1998). In the content analysis of this study, the essence of SCT was difficult to collect in a survey as well as to analyze based on the brief responses by the study participants. Therefore, future research using more sophisticated qualitative analysis, such as interviews in interpretive phenomenology, may provide better insight into the complexity of adoption of these teaching strategies in addition to their description.

Summary

This chapter described the results of this dissertation study. Instrument internal reliability was established with the reliability for the subscales of (a) perceived characteristics of SCBTS ($\alpha = .738$), (b) overall adoption variable ($\alpha = .707$), and (c) the overall POS ($\alpha = .943$). Content validity was previously established in the PAAI pilot study (CVI = 1.0).

The demographic characteristics analyzed for this study were based upon the responses from 95 clinical nurse educators who had previously taken the online course, “Clinical Faculty: A New Practice Role.” The majority were employed as a clinical instructor in the previous 12 months, were 51 years of age or older, had been a nurse for more than 20 years, worked full-time, held a master’s degree in nursing, were female, were Caucasian, and had been teaching 3 years or more. The preponderance of respondents taught in non-BSN programs, had taken the “Clinical Faculty” course within the previous three years, and had enrolled in a variety of continuing education activities in nursing education.

The SCBTS that clinical nurse educators most frequently reported using, in descending order, included (see Table 8): (a) articulation, (b) coaching, (c) DI, (d) scaffolding, (e) modeling, (f) managing instruction, (g) questioning, (h) reflection, (i) cognitive task structuring, and (j) exploration. The overall adoption variable mean showed an adoption mean above the mid-point range with little variance in the overall mean scores.

Ten of the 11 mean scores for the POS subscales of leadership, ownership of new ideas, and norms for diversity within their organizations were slightly above the mid-point of the range with little variance in the overall mean scores. Four of the mean scores were above 3.0. The overall POS score was slightly above the mid-range.

There was a significant positive linear relationship found between the perceived characteristic of relative advantage and the following SCBTS: (a) modeling, (b) cognitive task structuring, (c) coaching, (d) scaffolding, (e) managing instruction, (f) reflection, (g) exploration, and (h) questioning. There was a significant positive linear relationship between compatibility and the adoption of each of the SCBTS.

There was a significant negative linear relationship between complexity, trialability, and observability and the adoption of each of the SCBTS. There was a significant negative linear relationship between the perceived characteristics of complexity, trialability, and observability and the mean of the overall adoption score.

Greater experience as a clinical educator was associated with higher adoption of SCBTS, while less experience as a clinical educator was associated with less adoption of

SCBTS. There was no relationship found between holding certificates in a nursing specialty, the type of program, or the age of the participant and the adoption of SCBTS.

There was no relationship found between POS items and the adoption of SCBTS. There was no relationship found between the POS subscales of perceived leadership, ownership, norms for diversity, or the overall POS and adoption of SCBTS.

The open-ended question, “Describe any other teaching strategies you are using in the clinical setting,” was analyzed using qualitative content analysis. The results revealed that clinical nurse educators were using a variety of SCBTS and extensions of the strategies. The most frequently reported SCBTS were articulation (21.25%), modeling (16.25%), and exploration (13.75%). The unclassified strategies constituted 25 percent of the total strategies reported. On the other hand, the essence of SCT was difficult to analyze due to the brevity of the responses. It is recommended that future research using more sophisticated qualitative data collection and analysis would provide better insight into the complexity of adoption.

CHAPTER FIVE DISCUSSION

Discussion of Literature Review

Little is known about the factors influencing clinical nurse educators' adoption of new teaching strategies even though national nursing organizations over the past quarter century have called for reform and innovation in nursing education. The current study emerged in response to an absence of research related to the construct of adoption of SCBTS by clinical nurse educators. Socioculturally-based teaching strategies are based on SCT, which contends that human mental functioning is innately positioned in social, cultural, institutional, and historical contexts (Wertsch, 1991). Use of SCBTS, based on research in education (e.g., Bransford et al., 2000), may be more suited in preparing nurse graduates who must learn from the many contexts of social and cultural variables within an organizational climate to work safely and competently in today's health care system (Phillips, 2007a).

The clinical nursing education research literature is largely a-theoretical (DeYoung, 2003; Gaberson & Oermann, 2007) and does not uphold advances in teaching and learning. The current study was based on Everett Rogers' (2003) diffusion of innovations model to explore nurse educators' perceived characteristics of SCBTS, POS, and selected demographic characteristics in relation to adoption of SCBTS.

Using Rogers' (2003) model, the perceived characteristics that nurse educators consider when adopting SCBTS include relative advantage, compatibility, complexity, trialability, and observability. Rogers' perceived characteristics have been found to be the most influential factors in the rate of adoption and have been studied in many disciplines, including education (Bussey et al., 2000; Ihrke, 2002; Pankratz et al., 2002) and clinical practice (Denis et al., 2002; Lee, 2004; Panzano & Roth, 2006). There were no studies found using Rogers' (2003) model in clinical nursing education.

Perceived organizational support is important in setting the organizational climate for adoption of new ideas (e.g., SCBTS) (Dee, 1999; Eisenberger et al., 1997; Gregory et al., 2007; Lubbert, 1995; Siegel, 1985; Siegel & Kaemmerer, 1978). Educators who feel supported by their organizations are more likely to adopt new ideas (Conger & Kanungo, 1988; Dee et al., 2002; Fuller et al., 2006; Hutchinson, 1997; LaMastro, 2000;

O'Neil, 1990; Spreitzer, 1995). This study explored Siegel's (1985) POS dimensions of leadership, ownership, and norms for diversity, which parallel the prior conditions in Rogers' (2003) innovation-decision model, thus influencing the organizational climate where the decision-making for adoption of new ideas occurs. The organizational climate impacts attitudes toward engagement in change-related activities (Siegel, 1985). A positive organizational climate in a work environment is associated with adoption of new ideas and innovations (Brown & Eisenhardt, 1997; Damanpour, 1991; Doughty et al., 2002; Lubbert, 1995; Moos, 1994; Whitney, 1996).

The purpose of this descriptive, exploratory, correlational study was to explore the adoption of SCBTS reported by clinical nurse educators using Rogers' (2003) diffusion of innovations model. The relationship of the following variables were explored and analyzed in relation to the adoption of SCBTS: (a) clinical nurse educators' perceived characteristics of SCBTS (relative advantage, compatibility, complexity, trialability, and observability); (b) clinical nurse educators' POS (leadership, ownership, and norms for diversity); and (c) selected demographic characteristics (years of clinical education experience, certificate in nursing specialty, age, and type of nursing program). In addition, respondents were asked to answer an open-ended question, "What other teaching strategies are you using in the clinical setting?"

The focus of this chapter is to discuss the findings and to provide conclusions and recommendations based on the data analysis. The chapter begins with a discussion and an interpretation of the findings based on the research questions. The remaining sections contain conclusions, strengths and limitations of the study, implications for nursing education, and recommendations for future research.

Discussion of Findings

Research Question 1

What socioculturally-based teaching strategies have been reported by clinical nurse educators? The SCBTS that clinical nurse educators most frequently reported, in descending order, included (a) articulation, (b) coaching, (c) DI, (d) scaffolding, (e) modeling, (f) managing instruction, (g) questioning, (h) reflection, (i) cognitive task structuring, and (j) exploration. The overall adoption variable mean showed an adoption mean above the mid-point range with little variance in the overall mean scores.

The literature supports the use of the above teaching strategies as seen in the integrative review. Modeling was the most frequently published SCBTS (Beitz & Wieland, 2005; Benor & Leviyof, 1997; Brown, 1985; Donaldson & Carter, 2005; Gignac-Caille & Oermann, 2001; Hsu, 2006; Johnsen et al., 2002; Kotzabassaki et al., 1997; Morgan & Knox, 1987; Nahas et al., 1999; Nahas & Yam, 2001; Nehring, 1990); followed by reflection (Carroll et al., 2002; Honey et al., 2006; Kautz et al., 2005; Lowe & Kerr, 1998; Murphy, 2004; Nicholl & Higgins, 2004; A. Smith, 1998); articulation (Daroszewski et al., 2004; Fonteyn & Cahill, 1998; Hsu, 2007; Jensen & Joy, 2005; Phillips & Duke, 2001; Profetto-McGrath et al., 2004; Ritchie, 2003; Sanders & Welk, 2005; Sellappah et al., 1998; A. Smith, 1998); feedback (Donaldson & Carter, 2005; Hsu, 2006; Johnsen, et al., 2002; Nahas et al., 1999; Nahas & Yam, 2001; Rossignol, 2000); questioning (Hsu, 2007; Phillips & Duke, 2001; Profetto-McGrath et al., 2004; Sellappah et al., 1998); scaffolding and coaching (Cope et al., 2000; Hsu, 2007; Rossignol, 2000; Spouse, 2001); and exploration and creativity (Jackson & Sullivan, 1999; Kalischuk & Thorpe, 2002; Ku et al., 2002; Wang et al., 2004).

There were no publications about DI or cognitive task structuring in the nursing education literature to support their use by clinical educators; however, the literature regarding the SCBTS of modeling, questioning, and feeding-back are foundational components of DI and CTS and may be considered to support their use by clinical nurse educators (Magliaro et al., 2005) in this study.

Thirty-two studies were published about the use of SCBTS in clinical nursing education over the past decade, which supports the possibility that many innovations in teaching strategies are occurring at the institutional level but relatively few are being disseminated through the nursing education literature (Iwasiw et al., 2005). The dearth of literature and research on the adoption and effectiveness of new teaching strategies and curricula in clinical nursing education points to a critical need to study the adoption of new teaching strategies in order to provide needed evidence-based research that can be shared with the larger community of nurse educators.

Although the adoption of SCBTS has not been studied per se in clinical nursing education, studies of adoption based on Rogers' (2003) model abound in the education literature (e.g., Bussey et al., 2000; Ihrke, 2002; Pankratz et al., 2002) and clinical

practice literature (e.g., Denis et al., 2002; Lee, 2004; Panzano & Roth, 2006) thus theoretically supporting the adoption of SCBTS by clinical nurse educators in this study.

Research Question 2

What organizational support for innovation is perceived by nurse educators?

Clinical nurse educators perceived that the organization in which they were teaching was supportive of innovation. In particular, the subscales of leadership, ownership, and norms for diversity were above the mid-point range, indicating that these variables were perceived to be present in their academic organizations. Perceived organizational support is considered to be a norm of the social system of clinical nurse educators for this study, which is part of Rogers' (2003) model.

The findings of POS in the nurse educators' academic organizations are consistent with the findings of numerous authors who have discussed the importance of POS as a norm in the social system within workplace settings, thus supporting Rogers' (2003) model (e.g., Carson et al., 2002; Chan, 2001; Choi, 2006; Drucker, 1974, Eisenberger et al., 1997; Eisenberger et al., 1990; Henkin et al., 1993; Loi et al., 2006; Mathieu & Zajac, 1990; Meyer & Scott, 1983; Meyer & Allen, 1997; Mowday et al., 1982; O'Driscoll & Randall, 1999; Pearce & Robinson, 1988; Rhoades & Eisenberger, 2002; Self et al., 2005; Witt & Spitzmuller, 2007).

Research Question 3

What perceived characteristics of the socioculturally-based teaching strategies are related to the adoption of the strategies? The relationships measured in this study do not show a causal link as a result of the nature of correlational statistics reflecting association rather than causation (Polit, 1996); therefore, the results are viewed with caution and are considered to be exploratory in nature.

The findings showed nurse educators' perceptions of relative advantage and compatibility had a significant, positive, and strong relationship to the adoption of SCBTS by clinical nurse educators. The perceptions of complexity had a significant, negative, and strong association with the adoption of SCBTS. The above findings partially uphold Rogers' (2003) model, which has been supported by numerous adoption studies in the literature and the NLN-funded pilot study (e.g., Denis et al., 2002; Murray, 2007; Schmidt & Brown, 2007).

In addition, a meta-analysis of innovation characteristics and adoption of innovations revealed that perceived relative advantage, compatibility, and complexity were cited as the most significant attributes related to the adoption of innovations (Tornatzky & Klein, 1982). Seventy-five articles were reviewed concerning innovation characteristics and their relationship to innovation adoption and implementation. This supports the importance of the three perceived characteristics (relative advantage, compatibility, and complexity) in their relation to adoption in this study. Studies of perceived complexity used more sophisticated designs and better measures of innovation characteristics, pointing to a significant, negative correlation between complexity of an innovation and adoption. However, the authors point out the inconsistencies in the research, particularly relating to subjective perceptions of innovations across varying organizations. For example, compatibility was viewed by adopters as compatible with values and norms or represented congruence with existing practices of adopters, causing some difficulty to differentiate between the two, although both were positively related to adoption. Compatibility was the most frequently studied perceived characteristic, perhaps as a consequence of its broad definition. Relative advantage was also broadly defined and difficult to measure in the meta-analysis. Tornatzky and Klein (1982) called for more research, particularly relating to magnitude and directionality of the perceived characteristics related to adoption, in addition to studying other independent variables that may be associated with adoption.

Nurse educators' perceptions of the relative advantage (the degree to which an innovation is perceived as better than the idea that it supersedes [Rogers, 2003]) of SCBTS had a significant, positive, and strong relationship to the adoption of all SCBTS except DI and articulation. However, when measuring the relationship between perceived relative advantage and the overall adoption of SCBTS, findings showed that the higher the perceived relative advantage, the greater the adoption of *all* SCBTS; in other words, the greater the perceived relative advantage of SCBTS, the greater the adoption. Clarity of DI and articulation items (DeVellis, 2003) on the PAAI may have been a problem for respondents even though the Cronbach alpha was acceptable (.738) for the overall perceived characteristic items, and the content validity was 1.0. The PAAI may not have

clearly described all of the SCBTS, and therefore, not all items may have been completely understood by some respondents.

Nurse educators' perceptions of compatibility (the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of the potential adopters [Rogers, 2003]) of SCBTS also had a significant, positive, and strong relationship to the adoption of all SCBTS, thus supporting Rogers' (2003) model; in other words, the greater the perceived compatibility of the SCBTS, the greater the adoption.

Nurse educators' perceptions of complexity (the degree to which an innovation is perceived as difficult to understand and use [Rogers, 2003]) of SCBTS had a significant, negative, and strong association with the adoption of all SCBTS; in other words, the greater the complexity of the SCBTS, the less the adoption of the SCBTS. This notion is also supportive of Rogers' (2003) model.

The perceptions of trialability and observability had a significant, negative, and strong association with the adoption of SCBTS. This is not supportive of Rogers' (2003) model. There were no studies found with strong negative correlations associated with the perceived characteristics of trialability and observability and the adoption of teaching strategies. However, Rye and Kimberly (2007) conducted a meta-analysis of the adoption of innovations in health care organizations and concluded that innovation research has failed to capture much of the complexity of the innovation decision. This complexity may be manifested in the significantly negative associations in that the decision not to adopt constituted factors which were not measured in the PAAI.

Nurse educators' perceptions of observability (the degree to which the results of an innovation are visible to others [Rogers, 2003]) of SCBTS had a significant, negative, and strong association with the non-adoption of SCBTS; in other words, the greater the observability, the less adoption of the SCBTS. This finding is also not supportive of Rogers' (2003) model.

Rogers' (2003) model is partially supported in this study in that three of the five perceived characteristics (relative advantage, compatibility, and complexity) were significantly, positively associated with the adoption of SCBTS. Even though the entire model was not supported, these characteristics may be helpful in investigating the

adoption of new teaching strategies in clinical nursing education. This study constituted exploratory research; therefore, future studies are called for to investigate whether the findings will be replicated, which would indicate that the three perceived characteristics may be helpful in examining adoption of new teaching strategies in clinical nursing education.

On the other hand, Rogers' (2003) innovation-decision process may not be appropriate or valid in studying today's clinical educators' decisions to adopt new teaching strategies, perhaps as a result of the different decision systems or combinations of decision-making activities within organizations that influence adoption (Greer, 1985). Although there were no studies of the adoption of SCBTS by clinical nurse educators, Rye and Kimberly's (2007) meta-analysis of adoption of innovations in health care organizations concluded that research on innovation characteristics (e.g., the perceived characteristics of SCBTS in this study), although important, is surprisingly rare. Measures of the benefits of adoption of innovations in health care organizations are mixed in both sign and significance throughout studies. No studies have examined the consistency of research outcomes on adoption of innovations in health care organizations. Contradictory findings are widespread with few constructs that demonstrate both consistent significant and homogeneous direction across studies. Rogers himself had declared that the results of adoption of innovations studies had been consistently inconsistent (2003). The inconsistency of adoption research may shed light on the results of this study, which may question the scope of Rogers' (2003) model in studying adoption of SCBTS among clinical nurse educators.

Research Question 4

What demographic characteristics of clinical nurse educators are related to the adoption of socioculturally-based teaching strategies? Findings showed that more experienced clinical nurse educators were more likely to adopt SCBTS but that holding a certificate in a nursing specialty, the type of nursing program in which the educator teaches, and the clinical nurse educator's age were not associated with adoption of SCBTS.

The literature supports the idea that more experienced educators are viewed by other clinical educators and students as more competent (Johnsen et al., 2002) and,

therefore, may be more willing to adopt SCBTS. In addition, the academic organizations of more experienced nurse educators' are more supportive of innovation (Henkin et al., 1993). Many seasoned educators also have substantial long-term involvement in decision- and policy-making, and thus may be empowered to adopt new teaching strategies.

Holding certificates in nursing specialties was not found to be associated with adoption of SCBTS. There were no studies found linking certifications in nursing specialties with the adoption of teaching strategies. Certificates in nursing specialties do not necessarily indicate that educators are more willing to adopt new teaching strategies since many certifications focus on clinical competence and not educational specialties.

The type of nursing program was not associated with adoption of SCBTS. There were no studies found in the literature measuring the type of program and the adoption of SCBTS in clinical nursing education. However, one study found that RN to BSN programs were more likely to adopt innovative teaching strategies (Valiga & Ironside, 2007). This may be a result of the fact that the students already hold nursing licenses; thus, the curriculum can be more flexible.

Age was not associated with adoption of SCBTS. Age may be related to a greater commitment to institutionalized ideas and practices, and thus may not be associated with adoption (Rye & Kimberly, 2007).

Research Question 5

What is the relationship between perceived organizational support and adoption of socioculturally-based teaching strategies? There was no relationship found between POS and the adoption of SCBTS. The subscales of perceived leadership, ownership, and norms for diversity were not found to be correlated with adoption of SCBTS. This finding is puzzling in that the literature supports quite the opposite (Burke, 2003; Cameron & Masterson, 2000; Dee et al., 2002; Fuller et al., 2006; Henkin et al., 1993; Hutchinson, 1997; LaMastro, 2000; Laschinger et al., 2006; Patrick & Laschinger, 2006). This result is possibly explained by the responses of the nurse educators who felt supported by their organizations for innovation but who felt that individual decision-making was more important than POS in the adoption of SCBTS. Norms of the social system (e.g., perceived leadership, ownership, and norms for diversity) may be

difficult to change (Lafferty, Mahone, & Thombs, 2003) and therefore perceived by clinical nurse educators as less important than individual decisions when adopting SCBTS. Moreover, clinical nurse educators may not feel as if they are part of the norms of the social system in the academic setting but may be more affected by norms of the social system in the health care organization where they are teaching students.

Open-ended Question

Open-ended question: “Describe any other teaching strategies you are using in the clinical setting.” The qualitative content analysis revealed that a variety of teaching strategies are in use, including SCBTS and non-SCBTS.

Bonk and Kim’s (1998) definitions of SCBTS may not clearly or completely specify teaching strategies based on SCT, resulting in confusion about exactly what theoretical conceptualizations are being measured. The SCBTS may have been operationalized or interpreted in a way that may have been unclear to the respondents. Moreover, use of SCBTS by clinical nurse educators may occur on a continuum, and any definition of SCBTS may be too narrow to capture all of the possible ways that educators could use them. This is a measurement challenge and may require further development of construct definitions in future studies.

Conclusions

Findings from this study showed that many SCBTS have been adopted by nurse educators, which is supported in the literature, although sparsely over the last decade. It is possible that many more SCBTS have been adopted but not shared outside of the institution in which they were implemented. Clinical nurse educators perceived that the academic organizations in which they were teaching were supportive of innovation. Nurse educators perceived that leadership, ownership, and norms for diversity were present in their academic organizations.

Adoption of SCBTS was significantly related to the perceived characteristics of relative advantage, compatibility, and complexity of SCBTS, partially supporting Rogers’ (2003) model. The perceived characteristics of trialability and observability were significantly, negatively related to the adoption of SCBTS, not supporting the model.

More experienced clinical nurse educators were more likely to adopt SCBTS, but holding a certificate in a nursing specialty, the type of program in which the educator taught, and the age of the educator were not associated with the adoption of SCBTS.

The norms of the social system (e.g., perceived leadership, ownership, and norms for diversity) were not associated with the adoption of SCBTS. Although nurse educators perceived that their academic organizations were supportive of innovations, POS appeared to be less useful in understanding the adoption of SCBTS based on Rogers' (2003) model. Nurse educators may feel as though individual decision-making about the adoption of SCBTS is more important than norms of the social system, which are difficult to change. In addition, clinical nurse educators may feel more affected by norms of the health care system where they are teaching the students, rather than the norms of the social system of the academic setting with which they are affiliated.

In light of the significant, negative relationship between perceived trialability and perceived observability and the adoption of SCBTS mentioned above, and the non-significant relationship between POS and the adoption of SCBTS, a critical look at the assumptions of the study is called for. Rogers' (2003) model may not fully capture the complexity of the innovation-decision process, and thus, omitted variables may explain the significant negative correlations (Rye & Kimberly, 2007) between adoption of SCBTS and trialability and observability of SCBTS. In addition, Bonk and Kim's (1998) definitions of SCBTS may not have completely described all teaching strategies based on SCT that clinical nurse educators have adopted. The operationalization of SCBTS may have caused the items to be unclear to the respondents. The use of SCBTS by clinical nurse educators may occur on a continuum, and any definition of SCBTS may be too narrow to capture all of the possible ways that educators could use them.

Moreover, the complexity of the context in which clinical nurse educators work in the health care setting may cause problems for using Rogers' (2003) model in researching, fostering, and adopting SCBTS. In addition, the clinical nurse educators may have made individual decisions about adoption of teaching strategies that were not reflective of social norms or Rogers' (2003) innovation-decision process. Consequently, Rogers' (2003) model may not be applicable in measuring the adoption of SCBTS among clinical nurse educators and may need to be revised, combined with other models, or

examined with entirely new models in order to thoroughly study the adoption of SCBTS by clinical nurse educators. In addition, the PAAI may need to be revised to improve the comprehension of the operationalization of SCBTS by respondents.

Strengths and Limitations

Strengths

Strengths of this study include the exploration of the adoption of SCBTS by clinical nurse educators throughout the United States, which has not been studied previously. As new teaching strategies arise, research of strategies based on SCT may benefit the nursing profession through the education of more competent and safe practitioners in complex health care systems. The inclusion of both norms of the social system and the perceived characteristics of SCBTS in the study sheds light on important variables from Rogers' (2003) model that may provide evidence-based future educational interventions for schools of nursing regarding adoption of SCBTS. The PAAI, which was developed specifically for this study, may provide other nurse educators with opportunities to conduct further research with different populations of clinical nurse educators, thus generalizing the findings.

Limitations

Limitations of the study include the following:

1. The limitations of self-report instruments are recognized, including the uncertainty of respondents' representation of reality and the possible impact on the validity of the data. Data based on self-report may be potentially biased by evoking socially desirable responses.
2. The PAAI may not have clearly described all of the SCBTS, and therefore not all items may have been completely understood by some respondents.
3. Convenience sampling limits the study in the ability to generalize from the target population to all clinical nurse educators.
4. There may have been respondents who received invitations to participate in the research and did not respond or may have responded incompletely to the survey. It is not possible to learn their rationale, which may result in a biased sample.

5. Measuring the perceived characteristics of innovation (Rogers, 2003) and POS represents only some of the factors that may be associated with the adoption of SCBTS. The relationship of other factors affecting adoption is unknown.
6. All respondents were enrolled in an online course focusing on clinical teaching and thus may be more likely to adopt SCBTS. This potentially may result in a biased sample.
7. The sample size was small; therefore, the results may not be generalizable to the larger population.
8. The open-ended question was analyzed using qualitative content analysis and may not have captured the essence of the reported teaching strategies related to SCT or the adoption of SCBTS by clinical nurse educators as a result of the brief answers and the survey format.

Implications

Meeting the call for clinical nursing education reform requires attention to change and understanding how nurse educators adopt new teaching strategies. The change to SCBTS represents evidence-based teaching strategies founded in recent advances in constructivist education approaches, which are grounded in contextual learning in social and cultural environments, thus shifting the responsibility of learning primarily to the student. Using Rogers' (2003) model, the findings from this study explored (a) which SCBTS have been adopted by clinical nurse educators, (b) what organizational support nurse educators experience from their organizations, (c) which perceived characteristics of the SCBTS are related to the adoption of the strategies, (d) which demographic characteristics of clinical nurse educators are related to the adoption of SCBTS, and (e) what relationship exists between perceived organizational support and adoption of SCBTS.

The findings from this study reveal many implications for clinical nursing education. First, SCBTS were adopted by clinical nurse educators. While some nurse educators may use SCBTS as a supplement to traditional teaching methods, others may use them as a foundation to their teaching models. In particular, the perceived relative advantage, compatibility, and complexity of a teaching strategy may play a major part in

its adoption. Schools of nursing may consider these perceived characteristics when asking clinical faculty to adopt new teaching strategies.

Second, clinical nurse educators perceived their organizations to be supportive of innovation. Third, since the norms of the social system were not associated with adoption of SCBTS, nurse educators may feel as though individual decision-making about adoption of SCBTS is more important than norms of the social system, which are difficult to change.

Fourth, the adoption of new teaching strategies may be associated with the perceived relative advantage, compatibility, and complexity of the new strategies. Organizations which emphasize that new teaching strategies may be more advantageous than ones previously used may be associated with clinical educators' decisions to adopt the new strategies. Teaching strategies that are consistent with clinical educators' values, past experiences, and needs may be more readily adopted. The teaching strategies that are not difficult to use or are not too complex are more likely to be adopted by clinical nurse educators. All of these findings support Rogers' (2003) model and may provide an evidence-base for both academic organizations and nurse educators to use when deciding to adopt new teaching strategies.

On the other hand, findings from this study revealed that perceived trialability and observability may not be factors in the adoption of SCBTS. For today's nurse educators who build their teaching practice on evidence-based teaching (EBT), the perceived characteristics of trialability and observability may not be at all important in the adoption of teaching strategies. For example, nurse educators may be less willing to use the trial and error (trialability) approach to adopting new teaching strategies, particularly if they are based in evidence. The association of evidence-based practice and EBT and adoption is yet to be fully realized, and future research is needed to investigate the usefulness of Rogers' (2003) model for adoption of SCBTS by clinical nurse educators. Schools of nursing may not need to consider the perceived characteristics of trialability or observability for clinical nurse educators in the adoption of new teaching strategies since the respondents were more likely not to adopt SCBTS if they must try them out or be observable by others.

Fifth, as a result of this study, academic organizations may identify experienced clinical educators as champions of new teaching strategies, and others may follow in adopting them. Holding a certificate in a nursing specialty, the type of program in which the educator teaches, and the age of the educator may not be related to the adoption of SCBTS; thus, these variables may be less valid in the decision to adopt, and organizations may not need to consider them along with the teaching experience of a nurse educator in the adoption of SCBTS.

Sixth, nurse educators are beginning to use a variety of teaching strategies based on SCT. However, Bonk and Kim's (1998) definitions of SCBTS may not clearly or completely specify teaching strategies based on SCT, resulting in confusion about exactly what theoretical conceptualizations were being measured. The SCBTS may have been operationalized or interpreted in a way that may have been unclear to some respondents. This is a measurement challenge and may require further development of construct definitions in future studies.

Findings from this study suggest that adoption is not straightforward, but the perceived characteristics of teaching strategies play an important role in the clinical nurse educator's decision to adopt or not adopt SCBTS. Clinical nurse educators were more likely to adopt a teaching strategy if it was perceived to be advantageous, compatible, and not too complex, which is supportive of Rogers' (2003) model. On the other hand, clinical nurse educators were more likely not to adopt teaching strategies that they must try out or that must be observable by others. Adopters of SCBTS were more experienced clinical educators who felt supported by their academic organizations in terms of innovation; however, organizational support for innovations was not associated with adoption of the teaching strategies. Holding a certificate in a nursing specialty, the type of program in which the educator taught, and the age of the educator were not associated with the adoption of SCBTS.

Future research using Rogers' (2003) model is called for that may lead to organizational interventions to facilitate the adoption of needed changes in clinical nursing education and may point to evidence-based clinical teaching models founded on SCT. Conversely, Rogers' (2003) model may not be suitable in measuring adoption of SCBTS by clinical nurse educators and may need to be revised or combined with other

more appropriate models. New or different models may need to be examined to comprehensively study the adoption of SCBTS in clinical nurse educators.

Future Research

Evidence-based clinical teaching practices are necessary to establish credibility and effectiveness in educating today's nurse graduates. Clinical nursing education research is sparse and in need of more rigorous studies to determine best practices in clinical teaching. In light of the findings from this study, many implications for future research in nursing education exist.

1. Conduct research using a quasi-experimental design in order to compare the adoption of SCBTS of nurse educators who took the "Clinical Faculty" course and/or other formal or informal education about clinical teaching with those who did not. This design would determine whether the sample population was more likely to adopt SCBTS as a consequence of education about clinical teaching. The mean differences between the two groups could be compared and variables controlled with more sophisticated statistical analyses. Future studies should include adoption of SCBTS in many clinical courses across many schools of nursing.
2. Use a larger sample population to capture generalizability to the population of clinical nurse educators.
3. Re-test Rogers' (2003) model to determine whether all five perceived characteristics (relative advantage, compatibility, complexity, trialability, and observability) of SCBTS are related to the adoption of SCBTS by clinical nurse educators. Specifically, conducting further studies with different sample populations of clinical nurse educators may shed light on whether trialability and/or observability are not important in adoption of new teaching strategies. This future research may help to identify whether Rogers' (2003) model is applicable to adoption of teaching strategies by clinical nurse educators.

4. Re-test Rogers' (2003) model to determine whether the norms of the social system (perceived leadership, ownership, and norms for diversity) in both academic and health care organizations are related to the adoption of SCBTS by clinical nurse educators.
5. Conduct research about the relationship between evidence-based teaching (e.g., contact between students and faculty, reciprocity and cooperation among students, active learning, prompt feedback, time on task, high expectations, and respecting diverse talents and ways of learning [Chickering & Ehrmann, 1996]) and the adoption of new teaching strategies by today's clinical nurse educators.
6. Conduct interpretative research through interviews about the lived experiences of clinical nurse educators in adopting SCBTS in order to identify additional emerging themes.
7. Investigate the relationship between the use of SCBTS used by clinical nurse educators (e.g., social, cultural, contextual, and institutional factors) and the students' and nurse graduates' quality and safety competencies in health care settings. These include such things as patient-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. This may be conducted by examining (a) quality and records in health care facilities for nurse graduates, (b) interviews and/or surveys with clinical nurse managers about the competence and safety of new graduates, (c) interviews and/or surveys of new graduates about their perceived competency and safety in delivering patient care, (d) interviews and/or surveys of new graduates about their perceptions of their education in terms of preparation for complex patients in today's health care system, and (e) interviews with clinical nurse educators about their perceptions of the teaching strategies used to prepare competent, safe practitioners of care.

Further research of the above items will demonstrate the relationship between the norms of the social system, perceived characteristics, and the adoption of SCBTS with purposeful promotion of SCBTS and preparation of excellent nurse graduates to care for patients in today's complex health care delivery systems. If future studies support the use of Everett Rogers' (2003) model, it may be used as a theoretical framework for evidence-based decision-making founded on new and eventually cumulative research about the adoption of future teaching strategies in clinical nursing education. If future studies do not support Rogers' model, then perhaps it is not the appropriate model for studying the adoption of teaching strategies in clinical nursing education and may point to updating the model, or to the use of dissimilar, more appropriate models. Educational interventions for schools of nursing regarding adoption of SCBTS may help to establish best practices for clinical nursing education that can be diffused into practice and may provide evidence for improved clinical nursing education models resulting in more competent nurse graduates.

Appendix A
Permission to Use Rogers' (2003) Model



S I M O N & S C H U S T E R

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agnes.fisher@simonandschuster.com

Agnes Fisher
Director
Permissions Department

August 28, 2008

Janet M. Phillips
Indiana University School of Nursing
9701 Deerfield Circle
Carmel, IN 46032
Fax: 317-816-0023

Dear Janet Phillips:

In reply to your request received this afternoon, we are granting you permission to use Figure 5-1, p 170 (A Model of Five Stages of Innovation-Decision Process) from *Diffusion of Innovations*, 5th Edition, in your doctoral dissertation and in all copies to meet degree requirements at Indiana University School of Nursing. Reapply for permission for all subsequent print or electronic uses.

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Sincerely,

Appendix B

Survey from National League for Nursing-funded Study: Perceived Characteristics of Innovative Teaching Strategies based on Bonk and Kim's (1998) Socioculturally-based Teaching Strategies for Adults

Part I. Socioculturally-based Teaching Strategies

To what degree do you believe the following are characteristics of innovative teaching strategies? A five-point Likert scale was listed after each SCBTS (Bonk & Kim, 1998) ranging from 1 (*strongly agree*) to 5 (*strongly disagree*).

1. *Role modeling* to illustrate performance/practice standards and verbalize internal processes.
2. *Coaching* to observe and supervise students in guiding them toward expert performance/practice.
3. Providing *guidance* in supporting what learners cannot yet do and gradually removing that support as competence is displayed.
4. *Questioning* to request verbal responses from learners by supporting them with mental functions they cannot produce alone.
5. Encouraging student *articulation* of her or his reasoning and problem-solving process.
6. Encouraging student *exploration* and application of his or her problem-solving skills.
7. Fostering student *reflection* and self-awareness (e.g., through performance replays).
8. Providing *cognitive task structuring* by explaining and organizing the task to guide the student toward maximizing his or her potential.
9. *Managing instruction* with constructive feedback and positive reinforcement.
10. Using *direct instruction* to provide clarity and any additional learning content.

Part II. Everett Rogers' (2003) Innovation-decision Process Rating

If you were to adopt any of the above teaching strategies how would you rate the influence of the following items on the adoption? A five-point Likert scale was listed after each questions ranging from 1 (*strongly agree*) to 5 (*strongly disagree*).

1. *Relative advantage*— the innovative teaching strategy would have to be advantageous to my teaching.
2. *Compatibility*— the innovative teaching strategy would have to be compatible with my teaching strategies and the students' learning needs.
3. *Complexity*— the innovative teaching strategy would need to be relatively easy for me to use.
4. *Trialability*— I would have to be able to try out the innovative teaching strategy before I adopted it into my teaching practices.
5. *Observability*— I would want to be able to observe others using the innovative teaching strategy before I adopted it into my teaching practices.

Part III. Description of Present and Future Innovative Teaching Strategies

1. Describe any innovative teachings strategies that you presently use in the clinical setting.
2. Describe any innovative teaching strategies that you intend to use in the clinical setting in the future.

Appendix C

Permission to Use the Siegel Scale of Support for Innovation

Re: SSSI

Saul Siegel

Sent: Sunday, April 15, 2007 7:04 PM

To: Phillips, Janet Martha

Dear Janet, Yes, you have my [permission to use the] SSSI scale for your research. Good luck,

Saul Siegel

Appendix D

Letter of Invitation to Dissertation Study

Dear Participant,

You were recently enrolled in the online course, “Clinical Faculty: A New Practice Role.” I am writing to invite you to participate in a short survey about nurse educators’ adoption of teaching strategies in clinical education practice. Your participation will add to the science of nursing education providing an evidence-based foundation for future models of clinical nursing education. This research is part of a doctoral dissertation research study at Indiana University School of Nursing.

The survey is administered by SurveyShare.com, a secure survey service, and your responses will be anonymous. Any identifying information will be removed by the survey service ensuring that all confidentiality is preserved. All responses will be reported as group data.

Your participation in this survey is optional, but we would highly encourage your involvement because it will improve the work of nurse educators. We are unable to reimburse you for your participation but please know that your contributions to the development of the science of nursing education are valued.

Except for your time and inconvenience, there are no foreseeable risks for you in participating in this study.

Reading this letter and accessing the survey indicates that you understand the above information and give your informed consent to the completion of the survey.

If you have questions about the survey process, please feel free to contact SurveyShare at info@surveyshare.com. If you have any questions about the research please contact Janet M. Phillips at xxx@xxxx.xxx or her faculty advisor, Dr. Anna McDaniel at xxx@xxxx.xxx. Please click on the following link to complete the survey.
<http://www.surveyshare.com/survey/take/?sid=60457>

You will be asked to enter your e-mail address, which you have provided to us when you enrolled in the course, but your identity will not be linked to the survey results in any way, nor will they be used for any other purposes. Thank you for your contribution.

Sincerely,

Janet M. Phillips, PhD, RN

Faculty and Doctoral Candidate

Indiana University School of Nursing

P.S. Please respond by September 30, 2008.

Appendix E
Phillips Adoption Appraisal Instrument

Instructions: I am interested in finding out what teaching strategies you use in your pre-licensure program's clinical setting and your perceptions of how your school supports innovation. There are four parts to the survey: (a) demographic questions, (b) vignettes and use of teaching strategies, (c) description of other teaching strategies you are using, and (d) perceived organizational support for innovation. It should take you approximately 15–20 minutes to complete. Your participation is greatly appreciated.

Part I. Demographic Information

1. Do you work exclusively as a staff development educator in a health care setting?
 - a. Yes. If yes, please proceed to the end of the survey and submit. Thank you for your time.
 - b. No

2. In the past 12 months have you been employed as a clinical faculty member in a school of nursing with responsibility for teaching in the clinical setting for pre-licensure nursing students?
 - a. Yes
 - b. No. If no, please proceed to the end of the survey and submit. Thank you for your time.

3. How long have you been a registered nurse?
 - a. 0–2 years
 - b. 3–5 years
 - c. 6–10 years
 - d. 11–20 years
 - e. more than 20 years

4. How long have you been teaching nursing, including all faculty positions you have held?
 - a. 0–2 years
 - b. 3–5 years
 - c. 6–10 years
 - d. 11–20 years
 - e. more than 20 years

5. How long have you been a clinical educator?
 - a. 0–2 years
 - b. 3–5 years
 - c. 6–10 years
 - d. 11–20 years
 - e. more than 20 years

6. Are you a full-time or a part-time faculty member?
 - a. Full-time
 - b. Part-time

7. What type of pre-licensure nursing program do you teach in?
 - a. RN diploma
 - b. RN associate
 - c. BSN generic baccalaureate
 - d. BSN accelerated or second degree
 - e. LPN
 - f. Other (write in) _____

8. What is your highest level of formal education?
 - a. Diploma from vocational/practical nursing program
 - b. RN diploma
 - c. RN associate degree
 - d. Baccalaureate degree in nursing
 - e. Baccalaureate degree in other field
 - f. Master's degree in nursing
 - g. Master's degree in other field
 - h. Doctorate in nursing
 - i. Doctorate in other field

9. Do you hold a certificate in any nursing specialty area?
 - a. No
 - b. Yes
 - c. Other (write in) _____

10. When did you take the online course, "Clinical Faculty: A New Practice Role," from Indiana University?
 - a. 2003
 - b. 2004
 - c. 2005
 - d. 2006
 - e. 2007
 - f. Not sure

11. In the past 5 years have you enrolled in any of the following types of programs focusing on teaching in nursing? Check all that apply.

- a. Workshop
- b. Continuing education class
- c. Nurse educator certification preparation course
- d. Certificate in nursing education
- e. Master's degree course work
- f. Doctoral degree course work
- g. None
- h. Other (write in) _____

12. What is your gender?

- a. Female
- b. Male

13. What is your age?

- a. 21–30
- b. 31–40
- c. 41–50
- d. 51–60
- e. Over 60

14. What is your race/ethnicity?

- a. African American
- b. Asian
- c. Caucasian
- d. Hispanic
- e. Native American
- f. Other

Part II. Vignettes

Instructions: Below you will find ten vignettes describing examples of various teaching strategies that can be used in the clinical setting. Please read each vignette and indicate whether you use the strategies or similar strategies and what influenced your decision to adopt them.

Vignette I: *Modeling* to illustrate performance standards and verbalize internal processes.

Example of *modeling*: The instructor demonstrates communication with the patient's physician to the student by asking, "What is your rationale for ordering Digoxin in this patient?" The instructor then asks the student, "Do you have any other questions for the physician?"

15. I believe *modeling* might be better than other strategies I have used previously.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

16. *Modeling* is consistent with how I work with students.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

17. *Modeling* would be difficult for me to use in my clinical teaching.
 - a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

18. I would need to try *modeling* before I used it on a regular basis.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
19. I would need to see how *modeling* worked for other instructors before I used it.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
20. How often have you used *modeling* in your clinical teaching?
- Never
 - Sometimes— once or twice per semester
 - Often— once per week
 - Always— every clinical day in the semester

Vignette II. Encouraging student *articulation* of her or his reasoning and problem-solving process. Example of *articulation*: The student is preparing to mix two different types of insulin in the same syringe. Before the student prepares the syringe for the patient, the instructor says to the student, “Tell me about how you will mix the different types of insulin and your rationale.”

21. I believe *articulation* might be better than other strategies I have used previously.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree

22. *Articulation* is consistent with how I work with students.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
23. *Articulation* would be difficult for me to use in my clinical teaching.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
24. I would need to try *articulation* before I used it on a regular basis.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
25. I would need to see how *articulation* worked for other instructors before I used it.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
26. How often have you used *articulation* in your clinical teaching?
- Never
 - Sometimes— once or twice per semester
 - Often— once per week
 - Always— every clinical day in the semester

Vignette III. Providing *cognitive task structuring* by explaining and organizing the task within the student's learning potential. Example of *cognitive task structuring*: The instructor asks the students to develop a timeline of how to organize the tasks of the clinical day before coming to the clinical unit. In post-conference the instructor asks the students, "Talk about your timelines, whether they were helpful in getting your patient care completed in a timely manner, and share with one another various ways in which you could improve the timelines."

27. I believe *cognitive task structuring* might be better than other strategies I have used previously.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
28. *Cognitive task structuring* is consistent with how I work with students.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
29. *Cognitive task structuring* would be difficult for me to use in my clinical teaching.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
30. I would need to try *cognitive task structuring* before I used it on a regular basis.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

31. I would need to see how *cognitive task structuring* worked for other instructors before I used it.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
32. How often have you used *cognitive task structuring* in your clinical teaching?
- Never
 - Sometimes— once or twice per semester
 - Often— once per week
 - Always— every clinical day in the semester

Vignette IV. *Coaching* to observe and supervise students in guiding them toward expert performance. Example of *coaching*: The instructor asks the students how they will assess the patients' pain levels. A student states, "I will use the rating scale." The instructor responds, "You may want to consider including other assessment approaches such as facial grimacing, body posturing, or restlessness to get a more complete pain assessment."

33. I believe *coaching* might be better than other strategies I have used previously.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
34. *Coaching* is consistent with how I work with students.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree

35. *Coaching* would be difficult for me to use in my clinical teaching.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
36. I would need to try *coaching* before I used it on a regular basis.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
37. I would need to see how *coaching* worked for other instructors before I used it.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
38. How often have you used *coaching* in your clinical teaching?
- Never
 - Sometimes— once or twice per semester
 - Often— once per week
 - Always— every clinical day in the semester

Vignette V. *Scaffolding and fading* to support what learners cannot yet do and gradually removing that support as competence is displayed. Example of *scaffolding and fading*: On the first clinical day, the instructor wishes to teach the student about physical assessments and accompanies the student in completing the task. On the second clinical day, the instructor tells the student, “Complete the physical assessment on your own, then report back to me with any changes from yesterday.”

39. I believe *scaffolding and fading* might be better than other strategies I have used previously.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
40. *Scaffolding and fading* is consistent with how I work with students.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
41. *Scaffolding and fading* would be difficult for me to use in my clinical teaching.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
42. I would need to try *scaffolding and fading* before I used it on a regular basis.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
43. I would need to see how *scaffolding and fading* worked for other instructors before I used it.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree

44. How often have you used *scaffolding and fading* in your clinical teaching?
- a. Never
 - b. Sometimes— once or twice per semester
 - c. Often— once per week
 - d. Always— every clinical day in the semester

Vignette VI. *Managing instruction* with performance feedback and positive reinforcement. Example of *managing instruction*: The student is late in giving medications to a critical care patient. The instructor says to the student, “You have done a good job in meeting many of your patient’s needs, however next time I would suggest preparing the medications one half hour earlier so that you can manage your time more efficiently.”

45. I believe *managing instruction* might be better than other strategies I have used previously.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
46. *Managing instruction* is consistent with how I work with students.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
47. *Managing instruction* would be difficult for me to use in my clinical teaching.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

48. I would need to try *managing instruction* before I used it on a regular basis.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
49. I would need to see how *managing instruction* worked for other instructors before I used it.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
50. How often have you used *managing instruction* in your clinical teaching?
- Never
 - Sometimes— once or twice per semester
 - Often— once per week
 - Always—every clinical day in the semester

Vignette VII. Fostering student *reflection* and self-awareness (e.g., through performance replays). Example of *reflection*: The instructor divides the students into teams to care for a group of patients. Students choose their own roles such as team leader, patient care giver, chart recorder, and evaluator. The instructor asks the students to write down how they fulfilled their roles in the care of the patients. During post-conference the instructor asks students to talk about how they felt in each of their roles during the experience.

51. I believe *reflection* might be better than other strategies I have used previously.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree

52. *Reflection* is consistent with how I work with students.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
53. *Reflection* would be difficult for me to use in my clinical teaching.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
54. I would need to try *reflection* before I used it on a regular basis.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
55. I would need to see how *reflection* worked for other instructors before I used it.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
56. How often have you used *reflection* in your clinical teaching?
- a. Never
 - b. Sometimes— once or twice per semester
 - c. Often— once per week
 - d. Always— every clinical day in the semester

Vignette VIII. Pushing student *exploration* and application of his or her problem-solving skills. Example of *exploration*: Students are asked to select and read aloud a poem about human suffering in pre-conference on the oncology unit. In post-conference the students are asked to describe how the poem may have affected their caring for oncology patients.

57. I believe *exploration* might be better than other strategies I have used previously.

- a. Strongly disagree
- b. Disagree
- c. Agree
- d. Strongly agree

58. *Exploration* is consistent with how I work with students.

- a. Strongly disagree
- b. Disagree
- c. Agree
- d. Strongly agree

59. *Exploration* would be difficult for me to use in my clinical teaching.

- a. Strongly disagree
- b. Disagree
- c. Agree
- d. Strongly agree

60. I would need to try *exploration* before I used it on a regular basis.

- a. Strongly disagree
- b. Disagree
- c. Agree
- d. Strongly agree

61. I would need to see how *exploration* worked for other instructors before I used it.

- a. Strongly disagree
- b. Disagree
- c. Agree
- d. Strongly agree

62. How often have you used *exploration* in your clinical teaching?
- a. Never
 - b. Sometimes— once or twice per semester
 - c. Often— once per week
 - d. Always— every clinical day in the semester

Vignette IX. *Questioning* to request verbal response from learners by supporting them with mental functions they cannot produce alone. Example of *questioning*: During post-conference on a psychiatric nursing rotation, the instructor uses the game of Jeopardy to reinforce new content learned about the applications of different antipsychotic drugs given to patients on the unit.

63. I believe *questioning* might be better than other strategies I have used previously.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
64. *Questioning* is consistent with how I work with students.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
65. *Questioning* would be difficult for me to use in my clinical teaching.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

66. I would need to try *questioning* before I used it on a regular basis.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
67. I would need to see how *questioning* worked for other instructors before I used it.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
68. How often have you used *questioning* in your clinical teaching?
- Never
 - Sometimes— once or twice per semester
 - Often— once per week
 - Always— every clinical day in the semester

Vignette X. Using *direct instruction* to provide clarity, needed content, and missing information. Example of *direct instruction*: The instructor enters the room and notices the student is looking at the patients' cardiac monitor with a puzzled expression. The student asks, "Where is the p wave?" The instructor responds by stating, "This is a good example of atrial fibrillation. The p wave is absent when the atrium is firing erratically."

69. I believe *direct instruction* might be better than other strategies I have used previously.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree

70. *Direct instruction* is consistent with how I work with students.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
71. *Direct instruction* would be difficult for me to use in my clinical teaching.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
72. I would need to try *direct instruction* before I used it on a regular basis.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
73. I would need to see how *direct instruction* worked for other instructors before I used it.
- Strongly disagree
 - Disagree
 - Agree
 - Strongly agree
74. How often have you used *direct instruction* in your clinical teaching?
- Never
 - Sometimes— once or twice per semester
 - Often— once per week
 - Always— every clinical day in the semester

Part III. Description of other teaching strategies you are using.

Instructions: Write in any other teaching strategies you are using in the space provided below.

75. Describe any other teaching strategies you are using in the clinical setting (write in).

Part IV. Perceived Support for Innovation in Organizations

Instructions: Please rate the following questions about how the academic institution where you teach supports innovation.

76. My ability to function creatively is respected by the leadership.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
77. Around here people are allowed to try to solve the same problem in different ways.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
78. Creativity is encouraged here.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

79. The role of the leader in this organization can best be described as supportive.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
80. The leadership acts as if we are not very creative.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
81. Assistance in developing new ideas is readily available.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
82. People in this organization are encouraged to develop their own interests, even when they deviate from those of the organization.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
83. Individual independence is encouraged in this organization.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

84. Creative efforts are usually ignored here.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
85. People here try new approaches to tasks, as well as tried and true ones.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree
86. I mostly agree with how we do things here.
- a. Strongly disagree
 - b. Disagree
 - c. Agree
 - d. Strongly agree

Thank you for completing my survey!

Appendix F

SPSS Output Frequencies of Adoption of SCBTS

How often have you used MODELING in your clinical teaching? [AdoptMod]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	6	6.3	6.4	6.4
Sometimes	22	23.2	23.4	29.8
Often	35	36.8	37.2	67.0
Always	31	32.6	33.0	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

How often have you used ARTICULATION in your clinical teaching? [AdoptArt]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	1	1.1	1.1	1.1
Sometimes	6	6.3	6.4	7.4
Often	29	30.5	30.9	38.3
Always	58	61.1	61.7	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

How often have you used COGNITIVE TASK STRUCTURING in your clinical teaching? [AdoptCTS]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	20	21.1	21.5	21.5
Sometimes	32	33.7	34.4	55.9
Often	26	27.4	28.0	83.9
Always	15	15.8	16.1	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

How often have you used COACHING in your clinical teaching? [AdoptCoach]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	3	3.2	3.2	3.2
Sometimes	13	13.7	13.8	17.0
Often	26	27.4	27.7	44.7
Always	52	54.7	55.3	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

How often have you used SCAFFOLDING AND FADING in your clinical teaching?

[AdoptScaf]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	5	5.3	5.4	5.4
Sometimes	19	20.0	20.4	25.8
Often	36	37.9	38.7	64.5
Always	33	34.7	35.5	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

How often have you used MANAGING INSTRUCTION in your clinical teaching?

[AdoptMI]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	5	5.3	5.4	5.4
Sometimes	23	24.2	24.7	30.1
Often	47	49.5	50.5	80.6
Always	18	18.9	19.4	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

How often have you used REFLECTION in your clinical teaching? [AdoptRef]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	23	24.2	24.5	24.5
Sometimes	25	26.3	26.6	51.1
Often	16	16.8	17.0	68.1
Always	30	31.6	31.9	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

How often have you used EXPLORATION in your clinical teaching? [AdoptEx]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	48	50.5	51.6	51.6
Sometimes	34	35.8	36.6	88.2
Often	10	10.5	10.8	98.9
Always	1	1.1	1.1	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

How often have you used QUESTIONING in your clinical teaching? [AdoptQu]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	14	14.7	15.1	15.1
Sometimes	28	29.5	30.1	45.2
Often	28	29.5	30.1	75.3
Always	23	24.2	24.7	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

How often have you used DIRECTION INSTRUCTION in your clinical teaching?

[AdoptDI]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Never	3	3.2	3.2	3.2
Sometimes	12	12.6	12.8	16.0
Often	39	41.1	41.5	57.4
Always	40	42.1	42.6	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

Appendix G

SPSS Output Frequencies of Perceived Organizational Support

My ability to function creatively is respected by the leadership. [CrRespL]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	2	2.1	2.1	2.1
Disagree	12	12.6	12.8	14.9
Agree	56	58.9	59.6	74.5
Strongly Agree	24	25.3	25.5	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

Around here people are allowed to try to solve the same problem in different ways.

[SolPbmsN]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	3	3.2	3.2	3.2
Disagree	15	15.8	16.0	19.1
Agree	58	61.1	61.7	80.9
Strongly Agree	18	18.9	19.1	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

Creativity is encouraged here. [CrEncN]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	2	2.1	2.2	2.2
Disagree	14	14.7	15.2	17.4
Agree	57	60.0	62.0	79.3
Strongly Agree	19	20.0	20.7	100.0
Total	92	96.8	100.0	
Missing System	3	3.2		
Total	95	100.0		

The role of the leader in this organization can best be described as supportive.

[LeadSupL]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	1	1.1	1.1	1.1
Disagree	19	20.0	20.4	21.5
Agree	49	51.6	52.7	74.2
Strongly Agree	24	25.3	25.8	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

The leadership acts as if we are not very creative. [LeaNotCrL]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	1	1.1	1.1	1.1
Disagree	15	15.8	16.5	17.6
Agree	58	61.1	63.7	81.3
Strongly Agree	17	17.9	18.7	100.0
Total	91	95.8	100.0	
Missing System	4	4.2		
Total	95	100.0		

Assistance in developing new ideas is readily available. [AssistL]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	7	7.4	7.5	7.5
Disagree	28	29.5	30.1	37.6
Agree	50	52.6	53.8	91.4
Strongly Agree	8	8.4	8.6	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

People in this organization are encouraged to develop their own interests, even when they deviate from those of the organization. [EncinstL]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	10	10.5	10.8	10.8
Disagree	35	36.8	37.6	48.4
Agree	45	47.4	48.4	96.8
Strongly Agree	3	3.2	3.2	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

Individual independence is encouraged in this organization. [IndindpL]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	7	7.4	7.4	7.4
Disagree	21	22.1	22.3	29.8
Agree	60	63.2	63.8	93.6
Strongly Agree	6	6.3	6.4	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

Creative efforts are usually ignored here. [CrignN]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	2	2.1	2.2	2.2
Disagree	16	16.8	17.2	19.4
Agree	65	68.4	69.9	89.2
Strongly Agree	10	10.5	10.8	100.0
Total	93	97.9	100.0	
Missing System	2	2.1		
Total	95	100.0		

People here try new approaches to tasks, as well as tried and true ones. [NewAppO]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	2	2.1	2.1	2.1
Disagree	15	15.8	16.0	18.1
Agree	70	73.7	74.5	92.6
Strongly Agree	7	7.4	7.4	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

I mostly agree with how we do things here. [AgreeO]

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Strongly Disagree	1	1.1	1.1	1.1
Disagree	21	22.1	22.3	23.4
Agree	62	65.3	66.0	89.4
Strongly Agree	10	10.5	10.6	100.0
Total	94	98.9	100.0	
Missing System	1	1.1		
Total	95	100.0		

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CURRICULUM VITAE

Janet Martha Phillips

EDUCATION:

UNDERGRADUATE:	Nursing: DePauw University	B.S.N.	1978
GRADUATE:	Nursing: Ball State University	M.S.	2002
	Nursing: Indiana University	Ph.D.	2009

ACADEMIC APPOINTMENTS:

Associate Instructor, Indiana University School of Nursing 2003 to present
Responsible for teaching online courses in continuing education for the Office of Lifelong Learning. Plan and manage conferences for nurse educators. Present at public speaking engagements for nursing and education conferences at local, state, regional, and national levels. Teach two Capstone courses for the RN to BSN program in the Department of Environments for Health, preparing students in clinical and research areas before graduation. Edit and evaluate online courses. Mentor online instructors. Participate in planning and evaluation team meetings.

Contract Faculty, Ball State University School of Nursing 2002 to 2004
Developed and taught online courses. Recipient of grant from Indiana Higher Education Telecommunication System (IHETS)—carried out grant to place multimedia into the course authored. Participated in planning and evaluation faculty meetings.

Faculty, J. Everett Light Career Center School of Nursing 1995 to 1999
Responsible for clinical, laboratory, and classroom education of nursing students in a variety of areas. Conducted clinical conferences. Evaluated students' clinical competencies. Presented lectures on a variety of topics in the classroom. Developed and updated examinations and other evaluation criteria of student learning. Participated in faculty meetings to evaluate and improve the curriculum.

CONSULTANTSHIPS:

Peer reviewer for Web sites, HCPro, Inc. 2008

Online faculty consultant, Indiana University School of Nursing Office of Lifelong Learning 2005 to present

Consultant to Ball State University faculty for writing grant proposals 2003 to present

Consultant to Indiana University School of Nursing faculty for Web-based teaching and learning 2003 to present

Editor for Web courses, Indiana University School of Nursing, Office of Lifelong Learning 2003 to present

Peer reviewer for Web courses, Indiana University School of Nursing, Office of Lifelong Learning 2002 to present

OTHER RELEVANT WORK EXPERIENCE:

Project coordinator for the Executive Associate Dean of Academic Affairs, Indiana University School of Nursing. Responsible for the assistance, planning, and implementing all project activities. 2008 to present

Project coordinator, Fairbanks grant to Indiana University School of Nursing, *Establishing a School of Nursing Learning Consortium to Promote Faculty Development in Simulation Technology*. Responsible for the assistance, planning, and implementation of all project activities. 2007 to present

Faculty evaluator for grant to Indiana University School of Nursing, *Teaching Patient Safety and Clinical Judgment Using Multiple Patient Simulation Experiences*. Responsible for student evaluation and debriefing at two campuses of Indiana University. 2007 to present

Nurse coordinator, Cullen Medical Equipment, Naperville, IL 1993 to 1995
Responsible for infant apnea monitor teaching and sleep studies of infants with apnea. Taught infant CPR to parents of infants with apnea. Taught hospital staff and parents about sleep study equipment and use. Wrote policies for sleep studies. Conducted monthly home visits to families with infants with apnea and monitors.

Staff nurse, St. Vincent Hospitals, Indianapolis, IN 1990 to 1992
Responsible for the care of clients in a variety of clinical areas. Completed continuing education courses relevant to the clinical areas. Attended staff and patient care meetings.

Charge nurse, Dialysis Institute of Indiana, Indianapolis, IN 1984 to 1989
Responsible for the care of clients in a large dialysis center. Supervised the daily operations of the dialysis center including life-threatening situations. Managed staffing and performed staff evaluations. Conducted in-services for the staff.

Staff nurse and charge nurse, Methodist Hospital, Philadelphia, PA 1978 to 1983
Developed basic staff nurse and management skills in nursing practice on all shifts.

OTHER EDUCATIONAL EXPERIENCE:

September 2008	National League for Nursing Education Summit, San Antonio, TX
January 2008	Indiana University–Purdue University Indianapolis Faculty Development Excel Workshop, Indianapolis, IN
September 2007	National League for Nursing Education Summit, Phoenix, AZ
September 2006	National League for Nursing Education Summit, New York, NY
August 2005	Evidence-based Practice and Evidence-based Teaching Conference, National League for Nursing, San Antonio, TX
July 2005	National Nursing Staff Development Organization Conference, New Orleans, LA
April 2005	HealthStream E-Learning Summit for Nurse Educators, Nashville, TN
April 2005	Indiana Higher Education Telecommunications System Conference, Indianapolis, IN
April 2005	New Horizons for Nurse Educators Conference, Albany, NY
April 2005	Sigma Theta Tau International Conference, Indianapolis, IN
July 2004	National Nursing Staff Development Organization Conference, San Diego, CA
October 2003 & 2004	ISHET–INSDO–IUSON Educator Conference, Indianapolis, IN
June 2003 & 2004	Moving to Web-based Learning Conference, Indianapolis, IN
April 2003 & 2004	State Teaching and Learning Conference, Ball State University, Muncie, IN
September 2003	Capstone Preceptor Education Program, Indianapolis, IN
May & June 2003	Audited and facilitated online continuing education courses at Indiana University School of Nursing in <i>Teaching in Nursing</i> certificate program, Indianapolis, IN

May & June 2003	Audited online continuing education course at Indiana University School of Nursing in critical care, Indianapolis, IN
June 2002, 2003, 2004	National Nurse Educator Conference, Indiana University School of Nursing, Indianapolis, IN
November 2002	Complementary and Alternative Medicine Update, Indiana University School of Medicine, Indianapolis, IN
April 2002	Sigma Theta Tau Conference, Indianapolis, IN
September 1998 to 2000	Teaching in Nursing Conferences, Methodist Hospital, Indianapolis, IN
March 1994	CPR Instructor Certification course, Indianapolis, IN
1978–1999	Medical / Surgical Nursing in-services and conferences

LICENSURE:

Registered Nurse's Licensure, Indiana, active status

CERTIFICATION:

American Heart Association, CPR Instructor

PROFESSIONAL ORGANIZATIONS:

American Educational Research Association

Indiana League for Nursing

Indiana State Nurses Association

Midwest Nursing Research Society

National League for Nursing

National Nursing Staff Development Organization

Sigma Theta Tau International Honor Society of Nursing, Alpha Chapter

PROFESSIONAL SERVICE:

National League for Nursing, Member of the Task Group on Innovations in Curriculum Design for 2008, 2009, 2010

UNIVERSITY SERVICE:

Strategic Planning Committee, Indiana University School of Nursing	2006
Project Team Committee, Indiana University School of Nursing, Center for Teaching and Lifelong Learning	2007
Faculty interviewer for prospective BSN students at Indiana University School of Nursing	2008
Facilitation of discussion for PhD students. <i>Thriving in a PhD Program</i> . Indiana University School of Nursing, PhD Summer Intensive Program	2008

HONORS & AWARDS:

February 2009	Part-time Distinguished Teaching Award, Indiana University, \$2,000.00.
March 2008	Recipient of Emily Holmquist Doctoral Student Award from Indiana University Alumni Association.
August 2007	Indiana University Research Incentive Fellowship, \$15,000.
April 2007	Spring 2007 Travel Fellowship Award from the Indiana University Graduate Office and Fellowship Committee, \$600.00.
March 2007	Nomination for Sigma Theta Tau Honorary Society Excellence in Education Award.
August 2006	Nomination for K. Patricia Cross Future Leaders Award.
July 2006	Indiana University Research Incentive Fellowship, \$3,000.
June 2006	Indiana League for Nursing Doctoral Education Scholarship, \$1,000.
May 2006	National League for Nursing Education Summit Doctoral Student Award.
May 2006	Selected to present at the National League for Nursing Education Summit.
May 2005	Indiana University Doctoral Fellowship, \$12,000.

May 2002 Ball State University Dean's Citation for Academic Excellence for 4.0 GPA when graduating from master's program in Nursing Leadership.

April 2001 Induction into Sigma Theta Tau International Honor Society of Nursing.

GRANTS:

2006–2007 *Factors Describing Nurse Educators' Intent to Adopt Innovative Teaching Strategies.* (\$5,000). National League for Nursing, Nursing Education Research Grant.

2003–2004 *Complementary and Alternative Health Modalities: An Offering for Multidisciplinary Students.* Indiana Higher Education Telecommunication Systems. (IHETS) (\$32,000). To author and develop multimedia in online course. Ball State University.

TEACHING ASSIGNMENTS:

Indiana University

Spring 2008	Course Title	Contact Hrs.	Credits	Students
S483 12152	Clinical Nurse Practice Capstone		3	15
S484 12176	Research Utilization Seminars		1	15
Fall 2007	Course Title	Contact Hrs.	Credits	Students
S483 12152	Clinical Nurse Practice Capstone		3	12
S484 12176	Research Utilization Seminars		1	12
Summer 2007	Course Title	Contact Hrs.	Credits	Students
T619 5316	Computer Technology for Nurse Educators	45.0	3	50
Spring 2007	Course Title	Contact Hrs.	Credits	Students
S483 12152	Clinical Nurse Practice Capstone		3	11
S484 12176	Research Utilization Seminars		1	11
Summer 2006	Course Title	Contact Hrs.	Credits	Students
S483 12152	Clinical Nurse Practice Capstone		3	13
S484 12176	Research Utilization Seminars		1	13
T619 5316	Computer Technology for Nurse Educators	45.0	3	50

Spring 2006	Course Title	Contact Hrs.	Credits	Students
CE 024	Clinical Faculty: A New Practice Role	11.3		40
CE 012	Practicum: The Development of a Web-based Course	16.7		40
Fall 2005	Course Title	Contact Hrs.	Credits	Students
CE 009	Getting Started: An Introduction to Choosing and Using Web Course Management Software	8.3		40
CE 011	Teaching and Evaluation: Strategies for Web-based Courses	16.7		40
CE 012	Practicum: The Development of a Web-based Course	16.7		40
CE 018	Clinical Faculty: A New Practice Role	11.3		40
CE 024	Clinical Faculty: A New Practice Role	11.3		40
S483 16871	Clinical Nurse Practice Capstone		3	7
S484 16872	Research Utilization Seminars		1	7
T670 16879	Teaching in Nursing	45.0	3	50
Summer 2005	Course Title	Contact Hrs.	Credits	Students
CE 006	Getting Started: An Introduction to Choosing and Using Web Course Management Software	8.3		40
CE 008	Teaching and Evaluation: Strategies for Web-based Courses	16.7		40
CE 009	Practicum: The Development of a Web-based Course	16.8		40
T619 V875	Computer Technologies for Nurse Educators	45.0	3	4
Spring 2005	Course Title	Contact Hrs.	Credits	Students
CE	Getting Started: An Introduction to Choosing and Using Web Course Management Software	8.3		20
CE	Teaching and Evaluation: Strategies for Web-based Courses	16.7		20
CE	Practicum: The Development of a Web-based Course	16.8		20
CE	Clinical Faculty: A New Practice Role	11.3		40
CE	Clinical Faculty: A New Practice Role	11.3		40
T617	Evaluation in Nursing	45.0	3	50

Fall 2004	Course Title	Contact Hrs.	Credits	Students
CE 009	Getting Started: An Introduction to Choosing and Using Web Course Management Software	8.3		40
CE 011	Teaching and Evaluation: Strategies for Web-based Courses	16.7		40
CE 012	Practicum: The Development of a Web-based Course	16.8		40
CE 018	Clinical Faculty: A New Practice Role	11.3		40
CE 024	Clinical Faculty: A New Practice Role	11.3		40
S483 16871	Clinical Nurse Practice Capstone		3	5
S484 16872	Research Utilization Seminars		1	5
T670 16879	Teaching in Nursing	45.0	3	50

Summer 2004	Course Title	Contact Hrs.	Credits	Students
CE 006	Getting Started: An Introduction to Choosing and Using Web Course Management Software	8.3		40
CE 008	Teaching and Evaluation: Strategies for Web-based Courses	16.7		40
CE 009	Practicum: The Development of a Web-based Course	16.8		40
T619 V875	Computer Technologies for Nurse Educators	45.0	3	46

Spring 2004	Course Title	Contact Hrs.	Credits	Students
CE001	Getting Started: An Introduction to Choosing and Using Web Course Management Software	8.3		40
CE 008	Teaching and Evaluation: Strategies for Web-based Courses	16.7		40
CE 009	Practicum: The Development of a Web-based Course	16.8		40
CE 015	Clinical Faculty: A New Practice Role	11.3		40
T617 D261	Evaluation in Nursing	45.0	3	50

Fall 2003	Course Title	Contact Hrs.	Credits	Students
CE 001	Getting Started: An Introduction to Choosing and Using Web Course Management Software	8.3		40
CE002	Designing Web Pages for Web Courses	14.7		40
CE 003	Teaching and Evaluation: Strategies for Web-based Courses	45.0		40
CE 004	Practicum: The Development of a Web-based Course	16.8		40
CE 016	Clinical Faculty: A New Practice Role	11.3		40
CE 017	Clinical Faculty: A New Practice Role	11.3		40
T670 D357	Teaching in Nursing	45.0	3	50
S483 D151	Clinical Nursing Practice Capstone		3	20
S484 D152	Research Utilization Seminar		1	20

Summer 2003	Course Title	Contact Hrs.	Credits	Students
CE 003	Teaching and Evaluation Strategies for Web-based Courses	16.7		40
CE 015	Clinical Faculty: A New Practice Role	11.3		40

Ball State University

Fall 2003	Course Title	Contact Hrs.	Credits	Students
NUR 201	Complementary and Alternative Health Modalities		2	40

Spring 2003	Course Title	Contact Hrs.	Credits	Students
NUR 103	Health Behaviors: Cultural Variations		3	60
NUR 201	Complementary and Alternative Health Modalities		2	60

Fall 2002	Course Title	Contact Hrs.	Credits	Students
NUR 103	Health Behaviors: Cultural Variations		3	40

PRESENTATIONS:

Teaching

1. *Principles of adult learning*. (2003, Summer). Safe Sitter Staff Training Retreat, Indianapolis, IN.
2. *Active teaching and learning strategies online*. (2004, Spring). State Teaching and Learning Conference. Lafayette, IN.
3. *Online education for nurse educators: Getting started*. (2005, Spring). New Horizons for Nurse Educators Conference, Albany, NY.
4. *Blending e-learning, the classroom, and clinical practice: Meeting learning goals*. (2005, Summer). National Nursing Staff Development Organization Conference, New Orleans, LA.
5. *Technology in nursing education: Use today's tools to promote learning and enhance patient safety*. (2008, Spring). Audio conference for HCPro. Presented with Dr. Diane Billings.
6. *Secrets of leading simulation in your organization*. (2008, Summer). Fairbanks Simulation Institute, Indianapolis, IN.
7. *Leading the pack in evidence-based simulations*. (2008, Fall). Clinical Education Redesign Conference. Indianapolis, IN.

Research

1. *Why innovate? A study of the factors describing nurse educators' intent to adopt innovative teaching strategies*. (2007, Fall). National League for Nursing Education Summit, Phoenix, AZ. Presented with Sharon Vinten.
2. *Clinical nurse educators' intent to adopt innovative, socioculturally-based teaching strategies*. (2008, Spring). Midwest Nursing Research Society Conference. Indianapolis, IN.
3. *Teaching patient safety and clinical judgment using multiple-patient simulation experiences*. (2008, Fall). National League for Nursing Education Summit. San Antonio, TX. Presented with Drs. Pamela M. Ironside and Pamela R. Jeffries.
4. *Stuck in the mud? Using a framework to guide the adoption of evidence-based innovative teaching strategies*. (2006, Fall). National League for Nursing Education Summit, New York, NY.

Professional Service

1. *Listen to your heart and fly.* (1999, Spring). Commencement speaker at the School of Nursing Graduation Ceremony, J. Everett Light Career Center School of Nursing, Indianapolis, IN.
2. *Tips for writing a successful grant proposal.* (2004, Spring). Indiana Higher Education Telecommunication System (IHETS) Grant Workshop, Muncie, IN.
3. *Preparing preceptors: Education online.* (2004, Summer). National Nursing Staff Development Organization Conference, San Diego, CA.
4. *Integrating online learning in health care facilities.* (2004, Fall). ISHET–INSDO–IUSON Educator Conference, Indianapolis, IN.
5. *Preparing preceptors: Education online.* (2005, Spring). HealthStream E-Learning Summit, Nashville, TN.
6. *Research experiences as a doctoral student at Indiana University School of Nursing.* (2007, Fall). Board of Advisors Meeting, Indiana University School of Nursing, Indianapolis, IN.

PUBLICATIONS:

Teaching

1. *Phillips, J. M. (2005). Chat role play. *Journal of Nursing Education*, 44(1), 43.
2. *Phillips, J. M. (2005). Strategies for active learning in online continuing education. *The Journal of Continuing Education in Nursing*, 36(2), 77–83.
3. *Phillips, J. M., & Billings, D. M. (2007). Using Webcasts in continuing education in nursing. *The Journal of Continuing Education in Nursing*, 38(4). 152–153.

*Refereed

Research

1. Phillips, J. M. (2005). *From neurons to brain power: Cognitive neuroscience and brain-based learning.* Indianapolis, IN: Indiana University. (ERIC Document Reproduction Service No. ED490546).
2. *Phillips, J. M., & Vinten, S. (accepted for publication). Factors describing nurse educators' intent to adopt innovative teaching strategies. *Nursing Education Perspectives.*

*Refereed

Professional Service

1. *Phillips, J. M. (2006). Preparing preceptors through online education. *Journal of Nurses in Staff Development*, 22(3), 150–155.
2. Phillips, J. M. (2008). Bringing your staff together through team-building. *The Staff Educator*, 4(4), 8.
3. *National League for Nursing. (2008). *Building the science of nursing education: Foundation for evidence-based teaching and learning*. New York, NY. (contributed table for nursing education databases).

*Refereed