The Relationship of Nursing Faculty Clinical Teaching Behaviors to Student Learning

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Abstract

Clinical experience is the most important component of nursing education (Gaberson & Oermann, 2007; Walker, 2005). As part of the clinical learning environment, the clinical teaching behaviors of nursing faculty have significant potential to influence students' learning. Nurse educators have a responsibility to provide nursing students with clinical instruction that is most effective at facilitating learning however, there is a paucity of research on which to base practice. The purpose of this study was to explore the relationship of the use of clinical teaching behaviors of nursing faculty with students' perceptions of those behaviors' influence on learning. The study contributes new knowledge about the effectiveness of clinical teaching behaviors at facilitating learning and influencing students' perceptions of their clinical experiences.

A non-experimental survey, correlational design was used. The sample was 240 baccalaureate nursing students from three on-campus programs in Midwestern states. All students had completed at least one clinical course and were seeking their first nursing degree. The instrument was the Nursing Clinical Teacher Effectiveness Inventory (NCTEI) (Mogan & Knox, 1985) modified with an author-developed Influence on Learning Scale. It consisted of 47 teacher behaviors for which students rated frequency of use for a clinical instructor on a 7-point Likert scale. Students then identified the extent to which their learning was facilitated, based on the frequency of use of the teaching behavior, using a 5-point Likert scale. Pearson correlations between frequency of use of the teaching behaviors and facilitation of learning were significant at $p < .0001$ for all 47 items. Effect size was high for all but one item. The

range of r was .762 to .458. There was a significant difference in frequency of use of all 47 teaching behaviors for students who reported their clinical experience was positive than for those who reported their experience was not positive. Frequency of use was higher in the positive group.

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CHAPTER I: INTRODUCTION

Background

The primacy of clinical experience in the education of nursing students cannot be overstated: it is the *lifeblood* of nursing education. It is a more important component of the educational process than classroom learning (Gaberson & Oermann, 2007; Walker, 2005). The educational process is unique in the practice professions because being able to perform the activities of the profession in live situations as opposed to simply being able to express understanding of principles is a requisite competency of graduation (Shulman, 2005). This competency cannot be achieved by classroom learning alone (Oermann, 1998). Learning experiences must provide opportunities to apply theoretical principles to real time situations encountered on a daily basis by practicing nurses. (Benner, 1984; Reilly & Oermann, 1992).

In the practice profession of nursing, the clinical setting is where students are allowed to provide selected aspects of care for patients. Clinical nursing teachers are paramount in the process of clinical learning. Teachers plan the learning experiences, specify students' scope of practice, and determine parameters of expected learning outcomes. Students are given assignments to care for patients in conjunction with registered nurses who maintain final accountability for patient care. Students prepare for the assignment, then provide care as designated for the experience. The teachers facilitate learning by working with students to demonstrate, correct, and encourage appropriate nursing care. Students are expected to incorporate knowledge from each clinical experience into subsequent ones in which progression of nursing abilities is expected to be demonstrated. Through a series of these clinical experiences, students

learn to become nurses (Gaberson & Oermann, 2007; O'Connor, 2006; Oermann, 1998; Tanner, 2002).

While the clinical practice setting is a rich learning environment, it is also a multifaceted place imbedded with a myriad of variables, many of which are beyond the control of nurse educators (Mogan & Knox, 1987). "Learning occurs in a social context that is influenced by factors such as comfort, space and privacy issues, agency policy, personnel and staffing practices, institutional norms, and accessibility of educational experiences" (Raingruber & Bowles, 2000, p. 66). Each situation with patients is unique with its own novel set of uncertainties related to such things as patient status, responses to treatments, and decisions made by members of the health care team. Further, clinical situations are experienced uniquely by each student (Gaberson & Oermann, 2007) and there is the ever-present risk that students' actions, or lack thereof, may cause harm to patients. Amidst this dynamic learning environment are nurse educators who must simultaneously manage patients, students, staff relationships, and academics (Windsor, 1987; O'Connor, 2006).

The complex nature of clinical experiences presents a problem for scholars who choose to study clinical nursing education. Each of the components described are difficult to quantify and therefore arduous to measure. Compounding this issue is the inter-relatedness of the components that makes isolating any of the variables for in depth study unwieldy. However retreating from formidable tasks is not the hallmark of the nursing profession and must not be in regard to the multitudinous variables associated with the study of clinical teaching.

The teaching behaviors of nursing instructors are one set of variables that researchers have isolated for study in the area of clinical teaching. Clinical teaching has been the source of many studies, which have indicated that clinical teachers have an extremely significant influence on students' clinical experiences. Study of clinical teaching in nursing began with Barham's (1965) and Jacobson's (1966) critical incident research about clinical teaching behaviors of faculty. The behaviors they identified were deemed actions that equated with effective teaching. Over the next four decades, studies of clinical teaching effectiveness focused primarily on the teaching behaviors of nursing faculty.

"The effectiveness of clinical teaching can be judged on the extent to which it produces intended learning outcomes" (Gaberson & Oermann, 2007, p. 21). However, there is a paucity of literature available that addresses how clinical teaching behaviors of nursing faculty, influence student learning (Tanner, 2005). In order to achieve excellence in clinical nursing education, variables such as the relationship of clinical teaching behaviors to student learning must be thoroughly explored.

The Nursing Clinical Teacher Effectiveness Inventory (NCTEI), developed by Knox & Mogan, (1985) has evolved as the most prominent instrument used to study teaching behaviors of nursing faculty. It has been used with a variety of populations and nursing education settings. The studies involved asking students and faculty about use or importance of each behavior on a Likert scale toward the purpose of evaluating teacher effectiveness. Higher scores on the tool were equated with increased teaching effectiveness.

Mogan & Knox (1985) described teacher effectiveness as activities that facilitate learning however; the tool does not include any reference to learning in the instructions or individual survey items. The authors of the qualitative study from which the NCTEI was derived state, "Thus we do not really know what students learn from their clinical teacher, nor do we have any indication whether students learn more from a teacher they rate high" (Mogan & Knox, 1983, p. 11). None of the 13 studies using the NCTEI since its development in 1985 have incorporated measurement of learning, nor perception thereof, as a result of teacher use of the behaviors into the design of their studies.

Statement of the Problem

Actions of nurse educators are a critical component of nursing clinical education and have been well described by nurse researchers. Research to date has focused on describing and comparing behaviors and characteristics of clinical teachers through the use of various tools. Assumptions have been inferred that the teaching behaviors under study, which were derived from qualitative inquiry, result in learning. However, a page in the hermeneutical circle of the study of nursing clinical teacher behaviors is absent. That is, the question of how clinical teaching behaviors influence students' learning has not been reflected back to students. Without this phase of inquiry, the object of the efficacy of the teaching behaviors will remain unclear. Therefore, a need exists to study the relationship of clinical teaching behaviors of nursing faculty to student learning.

Method

The method for this study was a nonexperiemental survey, correlational design using a modified NCTEI (Mogan & Knox, 1985). The NCTEI was modified to include an author-developed influence on learning Likert scale for each of the 47 teaching behaviors. Participants rated how frequently a clinical instructor used the teaching behaviors, then rated how the frequency of use of the behavior facilitated their learning. The Pearson r was used to analyze for existence of correlations between frequency of use and influence on learning.

Purpose

The purpose of this correlational study was to explore the relationship of the use of clinical teaching behaviors of nursing faculty with students' perceptions of those behaviors' influence on learning.

Research Questions

The research questions of the present study were as follows:

1. Which clinical teaching behaviors have the highest and lowest frequency of use?
2. Which clinical teaching categories have the highest and lowest frequency of use?
3. Which clinical teaching behaviors do students perceive as having the greatest and least influence on learning?
4. Which clinical teaching categories do students perceive as having the greatest and least influence on learning?

5. Is there a relationship between frequency of use of clinical teaching behaviors and students' perceptions of those behaviors' influence on learning?

6. Is there a difference between frequency of use of clinical teaching behaviors and students' reports of the experience being positive or negative?

Research question five tested the hypothesis that there is a relationship between frequency of use of clinical teaching behaviors and students' perceptions of those behaviors' influence on learning. It was anticipated that as frequency of use of the behaviors increased, so too would students' perception of influence on learning.

Research question six tested the hypothesis that there is a difference between frequency of use of clinical teaching behaviors and students' reports of the experience being positive or negative. It was anticipated that the frequency of use of clinical teaching behaviors would be higher in the positive group than in the negative group.

Assumptions

Assumptions for this study were:

Students learn to become nurses in part, through repeated clinical experiences (Gaberson & Oermann, 2007; O'Connor, 2006; Oermann, 1998; Tanner, 2002). Clinical experience is a critical and effective component of nursing education.

Student ratings of faculty and self are valid. Although some controversy exists about absolute validity of student ratings of faculty (McDaniel, 2006), students' assessments of faculty are used frequently and are generally considered valid measures (Hassan, 2009; Raingruber & Bowles, 2000; Zimmerman & Westfall, 1988).

Clinical teacher behaviors documented by Knox & Mogan (1985) as effective have the potential to facilitate learning.

Relationships between teacher behavior and student learning can be demonstrated using proper research rigor and methodology (Abrami, d'Apollonia, & Cohen, 1990).

Definitions

The following operational definitions were used in this research study:

Clinical experience: Any planned situation in which students interact with patients to apply the nursing process. The clinical experience is inclusive of simulation and must involve variables that are unknown to students during preparation activities, eg. a case study in which all information is available would not be considered clinical experience.

Clinical learning: A process that is able to be known to learners and allows students to use what has been learned in a clinical experience in subsequent experiences.

Clinical teacher: A registered nurse who has been delegated responsibility for planning, conducting, and evaluating clinical experiences with nursing students. This term is used interchangeably with *instructor* by the nursing profession.

Clinical teaching: "Actions, activities, and verbalizations of the clinical instructor which facilitate student learning in the clinical setting" (O'Shea & Parsons, 1979, p. 411).

Clinical teaching behaviors: A set of 47 actions, delineated on the NCTEI (Knox & Mogan, 1985), used by nursing faculty for assisting students in the clinical learning process.

Clinical teaching categories: A classification system that divides the 47 NCTEI teaching behaviors into 5 subscales of evaluation, interpersonal relations, nursing competence, personality and teaching ability (Knox & Mogan, 1985).

Influence on learning scale: A five point Likert scale, developed for this study, on which respondents rate the degree of facilitation of learning effected for each of the 47 NCTEI items.

Instructor: A registered nurse who has been delegated responsibility for planning, conducting, and evaluating clinical experiences with nursing students. This term is used interchangeably with *teacher* by the nursing profession.

Learning : A "new experience (which) alters some unobservable mental processes that may or may not be manifested by a change in behavior or performance" (Billings & Halstead, 2009, p. 190).

Learning environment: All spatial, interpersonal, emotional, social, physical, cultural, psychological and perceptual variables, both tangible and intangible, that exist during a clinical experience.

Perception: An individual's awareness, understanding, opinion, or insight.

Significance

This study advances nursing science by contributing information about how the use of clinical teaching behaviors influences learning and students' perceptions of clinical experience. In the past, effectiveness of clinical teaching has been based on results of various tools to measure teacher effectiveness and student achievement of learning outcomes. Nurse educators have always used various teaching strategies in practice experience with students. Teachers evaluated that students met the learning

outcomes, which was interpreted to mean that the teaching behaviors worked. However, there was not empirical evidence that supported such a conclusion. This study provides evidence of a relationship between use of clinical teaching behaviors and student learning that can be used on which to base future practice.

The study also provides evidence that use of the teaching behaviors influences how students perceive their clinical experience. Many factors contribute to students' overall perceptions of their clinical experiences. The student-teacher relationship has been documented to be an important factor in the clinical learning environment (Beck, 1991; Cook, 2005; Elcigil & Yldrim, 2008; Fink, 2005; Gillespie, 2002; Kleehammer, Hart, & Keck, 1990; Kushnir, 1986; Ripley, 1986). Whereas researchers have addressed importance of the student teacher relationship, this study adds to the body of empirical knowledge by suggesting that increased use of the clinical teaching behaviors contributes to a more positive perception of the clinical experience by students.

CHAPTER II: LITERATURE REVIEW

Introduction

This literature review of clinical teaching behaviors of nursing faculty will serve three purposes. First, it will describe how Albert Bandura's (1977) social learning theory will function as the theoretical foundation for the study. Second, it will provide background and contextual information for the study in the areas of clinical learning and clinical learning environment. Third, it will present a review of the state of nursing science regarding clinical teaching behaviors, to which the study will contribute. The review is organized according to these identified themes.

Theoretical Framework

The theoretical framework for this study was Albert Bandura's social learning theory. The social perspective of learning theorizes that human function occurs in a reciprocal relationship with the environment in which there is interplay between one's personal factors, the environment, and their behavior (Bandura, 1977). Learning is an internal process that does not necessarily result in an immediate change in behavior. Learners experience the environment and interpret it according to unique, internal, personal factors then display behavior in response (Bandura, 1977). The resulting behavior then has an effect on the environment and the cycle repeats. Therefore, it is important for teachers to ascertain what learners perceive about the environment and how they interpret it (Braungart & Braungart, 2008). The aspects of social learning theory that are particularly germane to this study are reciprocal determination, modeling, and self-efficacy.

Reciprocal determination is the outcome of the interplay between the personal factors of the learner, the environment, and overt behavior (Bandura, 1974). The learners' personal factors include "cognitive, affective and biological events" (Pajerus, 2002, p. 2). As the learner interacts with the environment, the personal factors influence motivation to behave or respond in a certain manner. Learners experience consequences from the environment, or from one's own behavior, which are interpreted and influence future behavior. Subsequent experiences with similar situations are not likely to result in identical interpretation, and therefore behavior, due to the dynamic and ever changing interplay of factors. The interplay is depicted in Figure 1.

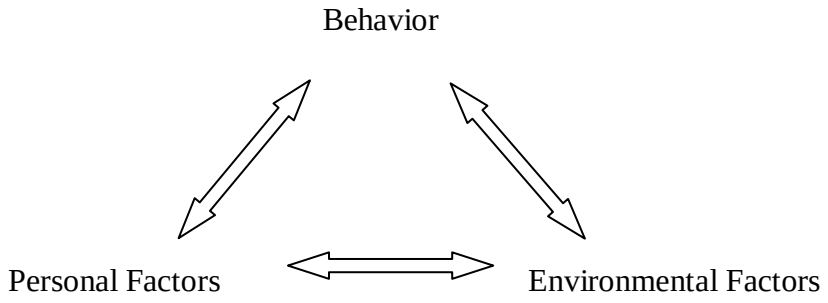


Figure 1: *Bandura's Reciprocal Determination* (Huitt, 2006; Pajeras, 2002)

Learners do not need to have direct experiences in order to learn. They also learn by observing and interpreting the behavior, and associated consequences, of others in a process termed vicarious reinforcement or modeling (Bandura, 1977). Learning by modeling involves a complex process of interpreting, coding, and retaining the information for future application, then engaging in the modeled behavior (Bandura, 1969). "Whether the model is viewed by the observer as rewarded

or punished may have a direct influence on learning" (Braungart & Braungart, 2008, p. 68). Learners may code and retain information about a modeled behavior however; psychomotor skills will likely require repeated direct experiences for mastery (Bigge & Shermis, 2004).

At the core of the personal factors affecting human behavior are self-efficacy beliefs (Bandura, Barbaranelli, Caprara & Pastorelli, 1996). Self-efficacy beliefs are particularly pertinent to learning situations because behavior is determined more by what people believe they are capable of doing "than what they are actually capable of accomplishing" (Pajerus, 2002, p. 4). People with a high sense of self-efficacy view "difficult tasks as challenges to be mastered" (p.2) as opposed to people with a low sense of self-efficacy who tend to avoid challenging tasks (Bandura, 1997). As one's sense of self-efficacy increases, so too does "how long they will strive and how long they will persist in their attempts" (Bandura, Adams & Beyer, 1977, p 138).

Bandura's social learning theory is highly applicable to clinical education. Clinical experiences involve interaction between students and the learning environment. The learning environment consists of social interactions with instructors, patients and their families, other students, and a host of health care workers. As students interact with the environment, including clinical instructors, they experience how instructors interpret their behavior. The consequences they receive because of these interactions provide cues for future behavior.

Students' observations of instructors' behavior during interactions with other students provide a platform for learning via modeling. For example, students may observe a peer perform a procedure or explain a process to an instructor. The outcome

and responses of both the other student and the instructor provide cues for future behavior.

Finally, student self-efficacy beliefs have the potential to have enormous effect on the outcome of clinical learning situations. Nursing students are, by necessity, placed in new situations quite frequently – nearly on a daily basis. Novel clinical situations have a tendency to produce anxiety in nursing students, which may decrease their sense of self-efficacy (Kleehammer, Hart & Keck, 1990; Kushnir, 1986). The teaching behaviors of faculty in these situations have the potential to increase or decrease the self-efficacy beliefs of students for future learning experiences.

The Nature of Clinical Learning

While there is a plethora of literature regarding various aspects of clinical nursing education, little has been written about clinical learning (Tiwari et al., 2005). "Nurses have not been careful record keepers of their own clinical learning" (Benner, 1984, p. 1). Perhaps this is because the concept of clinical learning is so nebulous. What does clinical learning look like? This is a difficult question because it is an internal process that cannot be seen. What is known about clinical learning is that it is internal, experiential, dynamic, and difficult to measure (Gaberson & Oermann, 2007). Much has been written about strategies to promote it and to measure its outcome. It is also well accepted that clinical instructors play an enormous role in the process.

Clinical learning is an internal process that is highly unique to the individual. Two students present and engaged in the same procedure with a patient may learn different things from the experience based on their previous experiences, and how they interpret the current situation (Gaberson & Oermann, 2007).

Experience is essential for clinical learning to occur (Benner, 1984; Gaberson & Oermann, 1992). The practice profession of nursing requires that the graduates be able to function as a nurses rather than simply being able to explain the concepts of nursing. "Action is equally important, maybe more important, than understanding" (Shuman, 2005). Nursing students must be able to respond to new situations with sound decisions, even though they do not know what to do when they enter the situation (Shuman, 2005). To develop this requisite competency for graduation, engagement in real time experiences is necessary.

Shuman (1999) further noted that *engagement* is the pivotal construct in what he termed as Signature Pedagogies of the practice professions. While the process of learning is internal, the pedagogies of engagement require learners' thoughts and insights to be visible and public. Clinical experiences require students to participate in conferencing sessions in which they explain and discuss their understandings to both their instructors and peer students. As students engage in this process, they develop new meanings of their own understandings, which provide a premise for future action (Reilly & Oermann, 1992; Shuman, 1999).

Another aspect of clinical learning is that it is dynamic. As new experiences are encountered, the new interpretations are added to what was known and the previous learning is remolded. New ways to apply (transfer) the knowledge to future situations are acquired and the cycle continues (Cafferarella, 2001). Benner (1984) described constructs derived from interpretation of previous experiences as intuition, and reported that it is more evident in expert nurses who have had extensive experience.

The nature of clinical experience is so complex that students may need to be taught how to learn from clinical experience (Dumas, Villeneuve & Chevrier, 2000). Dumas (2000) developed a tool through which faculty evaluate the ability to learn from clinical experiences. The tool defines 32 behaviors of learning that students address in a reflective process such as journaling. The reflection helps students focus on the learning process and their own method of learning from experience so that "they can be coached on how to learn from it for future experiences" (Dumas, Villeneuve & Chevrier, 2000, p. 251). This seminal work in the area of learning how to learn from experience opens a new avenue for discovery about the nature of clinical learning.

Nursing is bereft of literature regarding measurement of student clinical learning. Measurement of such an internal, holistic, multifaceted process is fraught with uncertainties beyond complete control of researchers. Current tools to assess student learning in the classroom are not appropriate to capture the multiple dimensions of clinical learning. The most closely associated clinical measurement used by nursing educators is evaluation of clinical outcomes. Clinical evaluation culminates in clinical instructors' judgment regarding student attainment of observable clinical objectives or outcomes. Clinical evaluation does not proclaim to measure the actual *process* of clinical learning. It measures the outcomes of student clinical learning. (Bonnel, 2009, Gaberson & Oermann, 2007, O'Connor, 2006). This field of literature is tangential to the topic of clinical teaching behavior and will not be addressed in this review.

A plethora of nursing literature has been published regarding creative teaching strategies for use in clinical experiences. This genre of literature includes such things as setting specific modifications and strategies to promote a particular aspect of learning, for example critical thinking, but do not address the global concept of clinical learning nor its measurement so will not be addressed in this review.

An understanding of the nebulous nature of clinical learning in nursing is necessary in the exploration of factors which may influence it. Clinical learning is a complex internal process that, although difficult to measure, is important to study.

Learning Environment

The learning environment has been the object of many investigations. Authors have investigated what students do in clinical learning settings as well as faculty roles and functions. Faculty caring and student-faculty relationships have been explored as influences on the clinical learning environment.

Student Perceptions of Clinical Experience

Foundational to the investigation of clinical experience is an understanding of students' lived experience of clinical. The nursing students in Windsor's (1987) qualitative study indicated that they learned nursing skills, time management, and professional socialization in their clinical experiences. They further indicated their learning was facilitated by being adequately prepared, having an instructor who was both pleasant and challenging, and being assigned a variety of patient assignments (Windsor, 1987). Students reported their goals for clinical experience were to help patients, cause no harm, integrate theory from class into clinical practice, and learn skills (Wilson, 1994). Students desired to "look good" as a student, which involved

being able to perform satisfactorily for the instructors, and as a nurse, which involved being able to perform satisfactorily for their patients (Wilson, 1994). A positive environment was desirable for learning to take place, yet students reported they were also able to learn from bad experiences (Papp, Markkanen & von Bonsdorff, 2003).

Influences in the Environment

Dunn & Hansford (1997) utilized multiple tools in their descriptive, mixed methods study of factors influencing students' perceptions of their clinical learning environment. Five factors that influence clinical learning were derived: staff-student relationship, nurse manager commitment, patient relationships, student satisfaction, hierarchy, and ritual. The authors suggested that collaboration between education and practice areas was necessary to promote a positive clinical learning environment.

Many authors have described anxiety and support issues associated with student clinical learning. Kushnir (1986) explored student reactions to the presence of instructors in the clinical setting. In this qualitative study with 20 students, 75 percent of the stressful encounters with faculty occurred in new, unfamiliar situations. Students reported that both verbal and nonverbal behaviors of faculty induced stress. The stressful situations caused physiologic responses such as increased pulse and hand tremors; psychological responses such as impaired memory, crying, slowness, and difficulty manipulating equipment; and emotional responses such as fear, anger and embarrassment in the students. Kushnir suggested that, since the respondents indicated they perceived the instructors to be in an evaluative mode, evaluation might be a cause of emotional stress. Wilson's (1994) findings, whose students indicated they were always aware the instructors were evaluating them, and some avoided student-faculty

interactions or depleted all other resources before asking instructors for assistance, support this concept. Wilson warned that faculty need to differentiate teaching from evaluation for the students in order to prevent the perception that every interaction with the instructor is evaluation.

Kushnir's (1986) findings are further supported by the work of Kleehammer, Hart & Keck (1990) who also reported faculty observation and evaluation were stressful for students. Other anxiety producing situations for students were fear of making mistakes, negative interaction with clinical faculty, initial experiences, being late, working with physicians, procedures, and equipment (Kleehammer, Hart & Keck, 1990).

The concerns about student anxiety and learning are echoed in Moscaritolo's (2009) review of literature regarding strategies to reduce anxiety in the clinical learning environment. The review reported that clinical was the most anxiety-producing aspect of nursing education and that faculty must be concerned about how anxiety affects performance. Evidence for use of humor, peer mentoring, and mindfulness training was presented as plausible interventional strategies to reduce student anxiety in the clinical area.

Although Benner's (1984) landmark study of the progression of nursing competence from novice to expert did not specifically address nursing students, the work can be applied to them. Benner noted that novice and advanced beginners could not take in all of the elements of new situations. They were overwhelmed in new situations and needed guidance and support to function effectively. This construct is

supported by descriptions of student responses in novel situations from later studies of Kushnir (1986) and Kleehammer, Hart, & Keck (1990).

Invitational education has been used in the study of anxiety and support issues associated with clinical teaching in nursing. Invitational education is a context for communication and strategies by which learners are invited to the learning experience (Cain, 2008). Using the Clinical Teaching Survey (Ripley, 1986), which assesses inviting teaching behaviors of clinical faculty, and the Student Affective Outcome Measure, which assesses student satisfaction with a particular course, Ripley found students' attitudes toward clinical learning were influenced by invitational teaching behaviors of the faculty. An implication was put forth that the use of inviting teaching behaviors enhances learning, although learning was not included in the research question or the study purpose statement. Expanding on Ripley's work, Cook (2005) combined the Clinical Teaching Survey (Ripley) and the S-Anxiety Scale (Speilberger as cited in Cook, 2005) to correlate inviting behaviors of clinical nursing faculty to student anxiety. While the study indicated that student anxiety was lower when inviting teaching behaviors were utilized, the author acknowledged that the impact of this conclusion on actual learning is unknown and is grounds for further study.

The overall atmosphere of the clinical environment is important in clinical learning. Papp, Markkanen & von Bonsdorff (2003) reported that the clinical environment should provide a pleasant atmosphere, good clinical practice, a cooperative nursing team, appreciation for students, opportunities for student participation and a positive clinical mentor. It should be noted that this study was

conducted in Finland where clinical mentors are staff nurses and teachers are seen as additional supports but not the primary clinical resource for students.

Studies Defining the Faculty Role and Caring

When examining the clinical learning environment, the role of clinical nursing faculty must be explored as an integral component. Vollman (1990) used interviews and observation with clinical instructors, students, staff nurses and head nurses to determine of what the clinical environment is comprised. In doing so, five functions of nursing faculty emerged: personal orientation, preparation of the nursing unit for students, preparation of the students for clinical instruction, instruction, monitoring, and evaluation. The roles of faculty were described as coach, consultant, colleague, and counselor. Seven dimensions of the clinical environment were classified as personal, physical, social, curricular, contextual, political, and economic and were noted to be present to some extent in all clinical learning situations.

Forrest, Brown & Pollack (1996) explored the present and ideal role of clinical nurse teachers through a two-phased grounded theory design. Themes that arose in the ideal teacher role were role clarity, quality of the clinical experience, realistic teaching, and a staff nurse preceptor. Use of a unimodel of teaching in which faculty teach in classroom and clinical was discouraged in the implications of the study. No other study in this review concurred with these findings. In contrast, this implication was contradicted by a study which indicated full time faculty were more effective than part time faculty (Allison-Jones, 2002).

Several studies examined the caring and supportive quality of the student-faculty relationship as it relates to the learning environment. In an evaluation of the

use of dialogue journals for clinical evaluation of students, Jackson (1987) derived themes that indicated a strong desire of both students and faculty to be known in a multifaceted nature that encompassed not only nursing and learning, but also their inner person with fears, faults, and aspirations. These themes were supported by three phenomenological studies that followed. Beck (1991) identified five themes essential to a caring student-faculty interaction. Those themes were compassion, competence, confidence, conscience, and commitment. As part of a larger study, Diekelmann (1992) explored the lived experiences of 44 students from ten schools. Findings indicated students shared an internal sense of being so overwhelmed by all of the things that are included in the nursing education experience that it was difficult to have a meaningful relationship focused on learning. Gillespie (2002) concluded that a connected student-teacher relationship allowed students to relax and focus on learning how to 'put it all together.' Students in the study indicated they could learn if a connected relationship did not exist but that the learning in these situations focused on skills and technical aspects that were needed to answer the instructor's questions.

In a survey of 276 nursing students at three colleges in Norway, Espeland, & Indrehus (2003) found that students considered the supportive behavior of faculty to be more important than challenging behavior. Fink (2005) studied clinical support and supervision of 60 sophomore and 29 junior nursing students at one university. Findings indicated that the supervision and support desired by the students was less than the supervision and support they obtained. The cumulative implication of these studies was that the faculty role and-student teacher relationship are significant influences in the clinical learning environment.

Teaching Behaviors

Whereas the studies described to this point have addressed the clinical experience from a global view of the faculty and student roles, many have chosen to examine specific teaching actions of nursing instructors. A few authors have worked to define clinical teaching activities. However, most authors have endeavored to describe the efficacy or influence of clinical teaching behaviors in some manner.

Role of the Clinical Teacher

Morgan's (1991) qualitative exploration of the teaching activities described action, assessment, evaluation, and role modeling activities as the normal functions of clinical nursing instructors. The instructors viewed the clinical area as more of a learning environment than teaching environment and described students' ability to learn in the experience without regard to the presence or absence of instructors. It was noted that it was not always clear if the observation activities of the instructors were used for teaching or for evaluation and recommended that studies to differentiate teaching from evaluation be undertaken. The call to differentiate teaching activities from evaluation was echoed by other nurse authors on the subject of clinical teaching and learning (Beitz & Wieland, 2005; Kushnir, 1986; Wilson, 1994).

Hsu (2006) conducted an exploratory qualitative study of clinical teaching behaviors in Taiwan that was similar in purpose to Morgan's (1991). Hsu utilized direct observation of ten clinical instructors by two researchers but did not include interviews with them. Both studies yielded comparable categories of teaching activities that included role modeling and affective relationships with students as important aspects of the teaching role.

Classic Studies on Clinical Teaching Behaviors

Teaching behaviors of clinical nursing faculty have been the topic of many studies. A primary theme for research has been to categorize clinical teaching behaviors as effective or ineffective or to assess the effectiveness of clinical teaching with regard to the use of given teaching behaviors. The earliest nursing source that could be located that addressed effective teaching behavior in nursing was Barham's (1965) critical incident study. The study, which analyzed student reports of incidents that exemplified effective or ineffective teaching behavior, resulted in 19 critical teaching behaviors that were termed as effective by the author. Jacobson (1966) expanded the critical incident technique by using written responses from 961 students combined with group interviews. A list of 58 critical requirements for effective teaching of nursing was derived. These two studies became the springboard for future study of clinical teaching behaviors.

Facilitating and Obstructing Behaviors

Several authors have conducted studies regarding facilitating, and obstructing or hindering, effects of teaching behaviors. Flager, Loper-Powers & Spitzer (1988) utilized an author developed survey involving 16 faculty behaviors which students ranked in terms of helping or hindering their self-confidence and open ended questions about the same. The study was conducted over a two-year period with 139 students. Five dimensions of clinical instruction were revealed: resource, evaluator, encourager, promoter of patient care and benevolent presence. While the study did not address influence on learning, it indicated that the four non-evaluation dimensions helped student confidence and inferred an influence on learning.

Cooke (1996) used a phenomenological approach to explore facilitation techniques used to assist students in difficult or challenging clinical situations. Poorman, Webb, & Mastorovich (2002) explored student perception of faculty helping and hindering actions for students who were struggling. Both studies indicated that the quality of time spent with students and a caring, respectful manner significantly affected student's view of helping versus hindering behavior of instructor (Cooke, 1996; Poorman, Webb, & Mastorovich, 2002). A similar conclusion was derived from the study of facilitating and hindering factors in the pediatric clinical setting (Oermann & Lukomski, 2001). These works add depth and dimension to factors that influence clinical learning.

Sellick & Kanitsaki (1991) compared teacher and student importance ratings of 20 clinical teacher behaviors within the five categories of teaching, nursing, evaluation, guidance and application. They found that both teachers and students rated teacher behaviors related to the student-teacher relationship the highest and evaluation as the lowest. The most highly rated behaviors were demonstrating interest in the student, providing helpful feedback, and giving positive reinforcement. While the authors did not explicitly study the efficacy of teaching behavior, they did associate importance ratings with facilitation of learning.

Other studies sought to identify specific clinical teaching behaviors of faculty that facilitate or interfere with learning (Lofmark & Wikblad, 2001; O'Shea & Parsons, 1979; Wong, 1978). Wong (1978) used a critical incident technique to compare first and second year students' perceptions of behaviors that helped and hindered learning. Responses indicated sensitivity to how the instructor made them

feel: four of nine helping behaviors and five of seven hindering behaviors focused on interpersonal interactions. This sensitivity was more evident in first year students than in second year students. Lofmark & Wikblad (2001) found that students at two colleges in Sweden perceived their learning was facilitated by being given independence and positive feedback and obstructed by deficits in the student-instructor relationship. Common themes in these studies were that positive feedback and collaborative supervision facilitated learning and a poor student-instructor relationship hindered learning. However, a correlational study of 483 students in 24 baccalaureate programs found that the student-faculty relationship had no relationship to the perception of clinical teaching effectiveness (Hamilton, 1995). This contradiction in results indicates a need for further research on the subject. Still, the majority of the evidence indicates the student-faculty relationship is a factor that that is perceived to be highly significant in clinical learning.

Effective Teaching Behaviors

A significant portion of the research regarding teaching behaviors of clinical nursing faculty revolved around the use of the term: effective. If nursing education is to implement best practice, the best -most effective- teaching behaviors must be known. Description of effective teaching is an important, albeit, difficult endeavor due to its elusive and multidimensional nature. As a result, multiple perspectives have been taken in research regarding effective teaching behaviors. Some of the studies described effective teaching characteristics, others ranked importance of the characteristics and some sought to differentiate perceptions of clinical teaching

effectiveness based on various qualities of the research subjects. Many studies use the term but do not include a corresponding definition.

Barham (1965) and Jacobson (1966) derived the term, effective, from the educational literature dating to the 1930s and initially used it to describe nursing clinical teaching behavior, although they did not define it. O'Shea & Parsons (1979) defined effective teaching behavior as "those actions, activities and verbalizations of the clinical instructor which facilitate student learning in the clinical setting" (p. 411). This definition was adopted in the development of the Nursing Clinical Teacher Effectiveness Instrument (Knox & Mogan, 1985). Brown (1981) defined effective as "producing a desired effect; impressive" (pg.6). Bergman & Gaitskill (1990) modified Brown's definition with the addition of "accomplishing goals and expectations" to "producing a desired effect" (pg. 36). Whether it was defined or not, for three decades the term effective was used extensively as the pivotal descriptor in the study of clinical teaching behavior in nursing.

O'Shea & Parsons (1979) conducted a qualitative study of 205 students and 24 instructors in one private university. The stated purpose of the study was to identify and compare effective and ineffective clinical teaching behaviors. The students and faculty were asked to write three to five teacher behaviors that facilitated and interfered with clinical learning. The categories that emerged from the responses were evaluative behaviors, instructive/assistive behaviors, and personal characteristics. The manner in which positive and negative feedback was provided was a prominent theme in evaluative behaviors. A major theme in instructive/assistive behaviors was availability of the instructor in the clinical setting and willingness to help.

Viverais-Dresler & Kutschke (2001) used an author-developed questionnaire to investigate 56 RN students' perceptions of clinical teacher behaviors. It was discovered that the RN students' results were comparable to studies with non-RN students in that the qualities and behaviors that promoted a positive teacher-student relationship were ranked the highest.

Krichbaum (1994) used a correlational design with two measures of clinical teaching behaviors and two measures of cognitive learning outcomes to describe clinical teaching effectiveness with preceptors and students. The sample consisted of 36 nursing students and 36 critical care preceptors. A relationship existed between the use of specific teaching behaviors (setting clear objectives, asking appropriate questions, proving timely feedback and projecting a positive, concerned attitude) and student learning outcomes. The study made progress in correlating teacher behavior to clinical learning. It also punctuated the myriad of variables inherent in the topic, including the subjectivity associated with self-reporting of the effectiveness of teacher behaviors.

Kelly (2007) compared student perceptions of effective clinical teaching in two groups of students 14 years apart. Although the terminology differed between the two groups due to the time lapse between the two measures, the findings indicated very similar perceptions. The students' view of an effective clinical teacher was one who was knowledgeable of both teaching pedagogies and clinical practice, had good communication skills, was a good listener and was available to students. The multifarious terminology, designs and instruments have provided rich

data about effective clinical teaching; however, the differences have also made it difficult to generalize the results for use in practice.

Tools to Evaluate Teacher Effectiveness

Un-Named Tools

Several tools to evaluate teacher effectiveness are described in the literature. Among these are three un-named instruments to evaluate clinical teaching effectiveness designed for use specifically at their respective universities. Kirschling et al., (1995) developed a tool that incorporated students' evaluation of classroom and clinical teaching effectiveness at both undergraduate and graduate levels. The instrument emphasized the teacher-student relationship which included the categories of "knowledge and expertise, facilitative teaching methods, communication style, use of own experiences and feedback" (Kirschling et al., 1995, p 401). Psychometric testing of the instrument showed evidence of construct validity and internal reliability.

In contrast to the integrated approach to evaluating teacher effectiveness via one instrument, Raingruber & Bowles (2000) developed a system of four setting specific tools. Students used a separate tool to evaluate faculty for direct clinical, skills laboratory, preceded clinical and didactic experiences. Faculty behaviors regarding caring, feedback and competency were incorporated into the tools as well as items specific to each course and setting.

The goal of Reeve's (1994) study was to create a reliable and valid instrument to measure effectiveness of clinical instructors at a university in California. The five-phase process began with identification of 50 characteristics of effective clinical teachers from the literature. Students, faculty, and recent RN graduates then rated the

items on a five point Likert scale for importance. The tool was then reduced to 27 items and administered to students, and faculty. The pilot test of the final tool was completed by 205 students and 18 faculty. The highest scored items were interpersonal relationships, appropriate feedback, and role modeling. Lowest scored items were faculty use of the conceptual framework, clarifying course objectives, and ability of faculty to do evaluation. These un-named instruments incorporated evidence-based aspects of teacher effectiveness however; they were program-specific which limits their usefulness for nursing education as a whole.

Clinical Teacher Characteristics Instrument

Brown (1981) created the Clinical Teacher Characteristics Instrument (CTCI) to identify characteristics of effective clinical teachers. The hypothesis of the study was that students and faculty would have comparable descriptions of effective clinical teachers. The tool consisted of two sections. The first section was a compilation of 20 teacher characteristics from the literature which were rated on a five point Likert scale according to importance. The second section asked respondents to select the five characteristics they deemed to be most important, then to rank them in order of importance. The CTCI was administered to 82 students and 42 clinical faculty at one baccalaureate school of nursing.

Brown's (1981) hypothesis was rejected when results revealed that students ranked relationships with the faculty as more important than professional competence of the faculty. Faculty responses of importance were inverted: faculty ranked professional competence as more important than relationships.

Bergman & Gaitskill (1990) extended Brown's study utilizing the same design and added a comparison of rankings by students based on grade level. The CTCI was administered to 134 students and 23 faculty at one baccalaureate nursing program in Ohio. While the student responses were comparable to those in Brown's study in many regards, the faculty placed higher value on student-faculty relationships in Berman & Gaitskill's extension study. Berman & Gaitskill's work also indicated that lower level students placed increased value on working with faculty than do higher level students, and that students and faculty rankings of the characteristics clinical instructors tend to converge as students progressed in the grade level.

Effective Clinical Teaching Behaviors

The Effective Clinical Teaching Behaviors is a 43 item Likert scale designed to measure effective nursing faculty clinical teaching behaviors (Zimmerman & Westfall, 1988). The authors identified that previous studies regarding clinical teaching behaviors were descriptive and that factor analysis had not been incorporated into the study designs. The tool was created via factor analysis of 53 clinical teaching behaviors that appeared in the literature. Following elimination of ten of the original items, the tool was administered to 281 nursing students for calculation of alpha coefficients and to 44 students for test-retest reliability. The tests revealed that the tool was both reliable and valid. The factor analysis added a dimension of rigor in instrumentation to the study of clinical teaching behaviors that had not been previously undertaken however, no subsequent nursing studies utilizing the tool could be located.

Clinical Teaching Evaluation

Fong & McCauley (1993) developed the Clinical Teaching Evaluation (CTE). The goal of their study was to develop and validate a tool that incorporated nursing expertise, teaching competence, and interpersonal skills of clinical nursing instructors. Thirty clinical teaching behaviors were identified from review of the literature and existing evaluation instruments. The items were rated on a five point Likert scale rating from least effective teachers to most effective teachers. Following review by a panel of experts and factor analysis procedures, the instrument was administered to 384 undergraduate students and 27 instructors at one private university. Results of initial testing of the CTE indicated that the instrument was reliable and valid.

Nursing Clinical Teacher Effectiveness Inventory

The Nursing Clinical Teacher Effectiveness Inventory has been the most prominently cited in the literature for the study of clinical teacher behavior. Knox and Mogan (1985) developed it in their study of clinical teacher effectiveness. The NCTEI is a survey instrument on which respondents rate 47 clinical teacher behaviors on a seven point Likert scale. The items are divided into five categories: teaching ability, nursing competence, evaluation, interpersonal relations, and personality. Scores for analysis are derived for both the individual items and each of the categories. Reliability and validity data obtained from Judith Mogan (Personal communication via research librarian at University of British Columbia, November 4, 2008) acknowledges difficulties in establishing absolute validity of the instrument due to absence of a precise definition of effective teaching and of effective clinical teaching. The definition of effective clinical teaching, adopted from a previous study, was

"those actions, activities and verbalizations of the clinical instructor which facilitate student learning in the clinical setting" (O'Shea & Parson's, 1979, pg 26). Although this definition incorporates an impact on student learning, the instructions to the respondent do not include any reference to the influence of the teaching behaviors on learning. The conclusion was stated that use of effective teaching behaviors would facilitate learning; therefore determining which teaching behaviors are more effective will allow teachers to use them and function more effectively (Knox & Mogan, 1985). This premise was used extensively in the reviewed literature.

The authors of the NCTEI published two studies using the instrument. The first study was an exploration of importance ratings of the teaching behaviors by 393 students, 49 faculty and 45 graduates in one university in Canada (Knox & Mogan, 1985). Students in the first year of the program, who had not yet received a summative clinical evaluation, were included in the study. The importance ratings of the teaching behavior categories were similar amongst the three groups with the highest importance scores for evaluation, followed by interpersonal relationships. The lowest rated category was personality. In the second study, 173 students and 28 clinical teachers in seven schools of nursing used the NCTEI to describe best and worst clinical teaching behaviors (Mogan & Knox, 1987). Students and faculty agreed that the best clinical teacher was a good role model, well-prepared, confident, approachable, enjoyed nursing and teaching, and demonstrated mutual respect. Students and faculty had less agreement about the worst clinical teacher, although they agreed that the worst clinical teacher was a poor role model, judgmental, not open-minded, did not support or encourage students and did not demonstrate mutual respect.

Nehring (1990) and Kotzabassaki et al (1997) replicated Mogan & Knox's (1987) descriptive study of the best and worst characteristics of clinical teachers. Nehring (1990) administered the NCTEI to 121 students and 63 faculty in 11 baccalaureate nursing programs in Ohio. The results were similar to those of Mogan &Knox and contributed to the validity of the tool. Kotzabassaki et al (1997) performed their study with 185 students and 31 faculty in Greece. Their results were consistent with previous findings (Mogan & Knox, 1987; Nehring, 1990) in that the best teacher is a good role model and encourages mutual respect. It was noted that the ratings of individual behaviors were lower than those obtained in the previous studies and was thought to be due to clinical teachers in Greece being staff nurses rather than professional educators. Evaluation, rated the highest in importance by students and faculty in the Mogan & Knox (1987) study, was rated fourth, third respectively in the Nehring (1990) study, and fourth by both groups in the Kotzabassaki et al (1997) replication.

A modified version of the NCTEI was used to identify student perceptions of ideal, best and poorest clinical teachers (Benor & Leviyof, 1997). One hundred twenty-three students at three nursing schools in Israel were surveyed. The profile of the best teacher emphasized nursing competency and evaluation with lesser ratings for interpersonal skills.

The NCTEI was used in various settings to determine differences between student and faculty perceptions of effective teaching behaviors. A common result of these studies was lack of statistically significant differences between student and faculty ratings of clinical teacher behavior (Lee, Cholowski & Williams, 2002; Li,

1997; Sieh & Bell, 1994). A study of 199 students and 22 faculty members at two associate degree nursing programs hypothesized that student and faculty perceptions would become more similar as the student progressed in the program (Sieh & Bell, 1994). The hypothesis was rejected when the data revealed that student perceptions of teaching effectiveness did not become more similar to faculty as they progressed in the program. Contrasting with previous studies, Gignac-Caille & Oermann (2001) reported significant differences in the ratings of students and faculty. The study of 292 students and 59 faculty in five associate degree programs indicated the students' highest rated category was evaluation and the faculty's highest rated category was interpersonal relationships.

Finally, the NCTEI was used to explore perceptions of teaching effectiveness based on variations in faculty, students, and program type. Allison-Jones & Hirt (2004) concluded there was no significant difference in student and teacher ratings of effective behaviors in an associate degree program. New evidence that emerged from this study of 583 students and 44 instructors in seven associate degree programs was that the students perceived the full-time faculty to be more effective than part-time faculty. In contrast, Holmes (2006) reported no significant difference in the student ratings of teaching effectiveness between full-time and part-time faculty. Beitz & Wieland (2005) found that part-time students rated faculty higher than did full-time students but there was no difference in ratings based on type of program tract in which the student was enrolled. The study was conducted with 198 students in BSN, LPN-MSN and RN-BSN tracts in one nursing program.

Summary

There is strong evidence that the student-teacher relationship is a significant factor in the clinical learning environment and needs further exploration (Brown, 1981; Bergman & Gaitskill, 1990; Gillespie, 2002; Jackson, 1987; Lofmark & Wikblad, 2001; O'Shea & Parsons, 1979; Reeve, 1994; Viverais-Dresler & Kutschke, 2001). Further studies are needed to determine specific aspects of the student-teacher relationship influence learning and how to promote those aspects in the practice of clinical teaching.

As part of the clinical learning environment, clinical instructors' teaching behaviors have significant potential to influence students' learning. Research to date has focused primarily on describing teaching behaviors in terms of effectiveness but has failed to study them with regard to their influence on student learning. Studies that explore the relationship of faculty clinical teaching behaviors to influence on student learning will contribute to a body of knowledge that will contribute to excellence in nursing education.

CHAPTER III: METHODS AND PROCEDURES

This chapter presents the methods and procedures used in this study. In addition, the sample size, data collection procedures, and the survey are discussed as well as statistical tests to analyze the data.

Research Design

This study used a nonexperimental survey, exploratory correlational design to explore the relationship between clinical teaching behaviors and their influence on students' learning. Nonexperimental designs are often used in nursing, and nursing education, because the research problems faced by these entities may not be appropriate for experimental designs (Polit & Beck, 2008). The survey design provided a means to collect data from students about how they perceived clinical instructors' teaching behaviors influenced learning, without disrupting the clinical experiences being studied. The design was an economical means to use, considering the allotted time frame, to provide data about the research questions that could be inferred from the sample to the population (Creswell, 2009). A cross-sectional approach was used to collect the survey data.

Sample

A single, purposive sample was drawn from prelicensure students attending on-campus baccalaureate nursing programs in three Midwestern states. Excluding students from other levels of nursing programs, such as associate, diploma or vocational programs, and from alternate delivery methods, such as distance or online, aided in achieving homogeneity. Although increasing homogeneity in the sample limits the population to which the sample may be generalized, it is an effective method

to control extraneous variables, thus strengthening the rigor of the design (Polit & Beck, 2009).

All participants had completed at least one clinical course with patient care. Students must have participated in patient care clinical activities in order to have the necessary experience to complete the survey.

Invitations were extended to 346 students. There were 254 surveys returned with 240 being useable that yielded a 69% return rate. Sampling bias was diminished by using a large sample size with clear criteria for the sample (Burns & Grove, 2005). As the sample size increases, so too does the power of the statistical inference to the population (Polit & Beck, 2009).

Demographics

Demographic information collected from participants was age, gender, grade point average, year in the program, number of clinical courses completed, and name of program.

Setting

The setting for this study was three accredited colleges of health sciences located in Midwestern states. All of the colleges were members of the American Health Sciences Education Consortium.

Ethical Considerations

The study was conducted with careful attention to ethical standards of research and rights of the participants. Students were given a written invitation to participate that explained the study and their rights (See Appendix A). The invitation described the purpose of the study and how the data would contribute to nursing education. It

also explained that participation was voluntary and that there was no risk of either participating or declining to participate. Students were also given College of Saint Mary's, The Rights of Research Participants (See Appendix B).

All data was collected anonymously: no names or personal identifiers were collected. All data was reported in aggregate form only so that individual data remained confidential. Completed surveys were maintained in a secure location by the investigator and will be destroyed upon completion of the dissertation process.

Data from the pilot was used solely for analysis of the tool and was not used in data analysis for the study. Students in the pilot were excluded from participation in the full study. None of the participants for the pilot or study were enrolled in the investigator's course during data collection.

Tool

Demographic Section

The tool for this study consisted of three sections – demographics, Nursing Clinical Teacher Effectiveness Inventory, and Influence on Learning Scale (See Appendix C). The demographic section consisted of *fill in the blank* and *circle one* items regarding age, number of clinical courses completed, gender, grade point average, and year in program. The instrument was printed on colored paper with a unique color for each site for identifying the name of the program.

Nursing Clinical Teacher Effectiveness Inventory

The main portion of the tool was a modification of the Nursing Clinical Teacher Effectiveness Inventory (Knox & Mogan, 1985). The NCTEI is a 47-item survey instrument on which respondents rate instructors' use of clinical teaching

behaviors on a seven point Likert scale. The items are grouped into five categories of teaching behavior: teaching ability, nursing competence, personality traits, interpersonal relations and evaluation. Scores are reported for each item and category. In the original study, category scores were obtained by summing scores of all items within a category (Knox & Mogan, 1985, p 333). Most subsequent studies reported category scores as the mean of all scores within a category (Allison-Jones. 2004; Benor & Leviyof, 1997; Hart, 2009; Holmes, 2006; Gignac-Caile & Oermann, 2001; Kotzabassaki, et al., 1997; Lee, Cholowski, & Williams, 2002; Li, 1997; Nehring, 1990; Sieh & Bell, 1994). The former method of calculating category scores was used for this study.

The NCTEI was based on data obtained in a post hoc qualitative study of teacher effectiveness at the University of British Columbia, Vancouver (Mogan & Knox, 1983). The researchers used written responses to open-ended questions from the university's existing teacher evaluation tool that was administered to all students at the end of each clinical rotation. The questions were, "What are the most effective aspects of this individual's instruction?" and "How can this instructor's effectiveness be improved in this course?" (Mogan & Knox, 1983, p. 6). Five categories of teaching effectiveness emerged through analysis. These categories were determined to be consistent with teaching behaviors identified in the literature (Brown, 1981; Jacobsen, 1966; O'Shea & Parsons, 1979).

Knox & Mogan published the first study using the NCTEI in 1985. The NCTEI was administered to 393 nursing students, 49 faculty and 45 graduates in this

exploratory, comparative study at a university school of nursing in Canada. Results showed the importance ratings were similar amongst the three groups.

Mogan and Knox (1987) further tested the NCTEI in a study which described differences between student and faculty ratings of best and worst clinical teachers. The study involved 173 students and 28 clinical teachers. The two groups agreed on characteristics of best teachers but had less agreement on characteristics of worst teachers.

The NCTEI was used in multiple studies using various populations and geographic areas. Mogan & Knox' (1987) characteristics of best and worst clinical teacher study was replicated in Greece, Israel, Hong Kong and Australia and also using baccalaureate and associate degree students in the United States (Benor & Leviyof, 1997; Gignac-Caile & Oermann, 2001; Kotzabassaki, et al., 1997; Lee, Cholowski, & Williams, 2002; Nehring, 1990; Sieh & Bell, 1994). The tool was also used in studies to differentiate perceptions of teacher effectiveness between full-time and part-time faculty, between full-time and part-time students, and between traditional and accelerated program students (Allison-Jones & Hirt, 2002; Beitz & Wieland, 2005; Hart, 2009; Holmes, 2006). Although some minor variations existed, these studies revealed consistent results over time.

Reliability and validity of the NCTEI was established through several methods. Initial reliability coefficients for each item ranged from .79 to .89 (Knox & Mogan, 1985). The 1985 article did not report reliability coefficients for the categories however, a narrative regarding reliability during instrument development obtained from the research librarian at the University of British Columbia (Personal email

communication, November 8, 2008) provided reliability information that does not appear in published literature. Reliability coefficients for the five categories during instrument development were: teaching .89, nursing competence .84, evaluation .82, interpersonal relationship .86, and personal traits .83. The reliability coefficients of both the individual items and the categories have remained stable during repeated use of the instrument. Test-retest reliability was reported to be acceptable (Knox & Mogan, 1985) with probability ranging from .76 to .93 (Mogan & Knox, 1987).

Validity of the tool was established by determining that the clinical teacher behavior items from the NCTEI were consistent with other clinical teaching behaviors that appeared in the literature (Mogan & Knox, 1985). Permission to utilize the NCTEI was obtained from Judith Mogan (Personal email communication via research librarian at the University of British Columbia, Vancouver, November 4, 2008).

One form of the NCTEI was used for this study. Students were asked to use the seven point Likert scale to rate one instructor for one clinical experience. Students were directed to rate each item regarding how frequently the instructor used the clinical teaching behavior during the selected clinical experience.

Influence on Learning

The tool also included an author developed Influence on Learning Scale. This scale was designed to capture students' perceptions of the degree to which clinical teaching behaviors facilitated their learning. The tool contained a five point Likert scale for each of the 47 NCTEI items. After students rated how frequently the clinical teaching behavior was used, they rated how the frequency of use of the clinical teaching behavior helped their learning.

Validity describes the extent to which a tool actually measures what it was designed to measure (Burns & Grove, 2005). Face validity describes appearance of the suitability of the instrument to measure what it proclaims to measure. Although this method does not provide strong substantiation of validity, it is a useful contributor to the process (Polit & Beck, 2008). A panel of higher education experts critically reviewed the tool for this study and made suggestions regarding wording, format, and content. After the suggested revisions were incorporated into the tool, the panel agreed that the tool appeared that it would capture students' perceptions of the degree to which teaching behaviors' influenced their learning.

Pilot Study

Reliability for the study instrument was established via a pilot study with 39 volunteers

who met the study criteria. Participants were asked to complete the tool according to instructions. They were also asked to note any confusing items, to make suggestions about the tool, or to comment if they thought the tool was clear and functional.

All pilot participants completed the survey in 12 minutes or less. They stated the intent of the tool and instructions were clear. They did not suggest revision of any of the survey items. Rules for dealing with missing data and selection for more than one response were developed and applied to the data analysis.

Cronbach's alpha was calculated for both teaching behavior and learning influence items using the pilot data. The alpha coefficients were .963 for the teaching behaviors scale and .970 for the learning influence scale. All reliability coefficients

were above the desirable .70 level (Burns & Grove, 2005) and therefore acceptable to allow the study to proceed. (See Appendix D for pilot study reliability data).

Research questions one through four were descriptive in nature and were not tested using the pilot data.

The fifth research question was tested using the pilot data. Positive correlations were demonstrated between frequency of use of each of the teaching behaviors and the corresponding influence on learning items. Correlations ranged from .717 to .888, which provided initial support of the hypotheses that there is a relationship between frequency of use of clinical teaching behaviors and students perceptions of those behavior's influence on learning.

The sixth research question could not be tested with the pilot data due to an insufficient number of students rating their clinical experiences as negative. Such a small group size did not allow the assumptions of the test to be met.

The results of the pilot study indicated that the instrument was reliable. No revisions to the tool were indicated. Initial testing of the research questions demonstrated the tool was sufficiently sensitive to answer all of the questions with a larger sample.

Study Reliability

Reliability data for the study is presented in Table 1. The alpha coefficient for the combined teaching behaviors was .983, and .974 for influence on learning. Alpha coefficients for the teaching behavior categories ranged from .906 to .953, and .871 to .935 for learning influence. All were well above the acceptable range for reliability.

Table 1

Cronbach's Alpha Coefficients for Categories

Category	Alpha Coefficient	Number of Items in Category
Teaching Ability		17
Teaching Behavior	.952	
Learning Influence	.935	
Nursing Competence		9
Teaching Behavior	.906	
Learning Influence	.871	
Evaluation		8
Teaching Behavior	.921	
Learning Influence	.904	
Interpersonal Relations		6
Teaching Behavior	.953	
Learning Influence	.931	
Personality Traits		7
Teaching Behavior	.925	
Learning Influence	.921	

Procedure

Appropriate approvals were obtained prior to data collection. Approval to conduct the study was granted by the College of Saint Mary institutional review board (IRB). Permission to conduct the pilot and to collect data for the study was obtained from the IRB at a school of nursing in Nebraska.

Nursing deans of two other Midwestern programs (Ohio and Wisconsin) were provided information about the study, and asked to authorize data collection from their students. Following review of the study through respective internal processes, permission to conduct the study was obtained from each program. All programs were members of the American Health Sciences Education Consortium

The invitation to participate and Rights of Research Participants were attached to each survey, then mailed to designated contact persons at each site. Mailings included the administration instructions and procedures for returning completed surveys, which had been previously arranged with the deans of the programs. The mailings included self-addressed envelopes with return postage attached.

Statistical Tests

Demographic data were reported in a chart using descriptive statistics. The categorical variables; gender, GPA, year in program, and name of program, were reported by frequency and percent. Mean, percent, and range of the quantitative variables; age and number of clinical courses completed, were also be reported.

Descriptive statistics were used to address the first, second, third, and fourth research questions. The means and standard deviations of the clinical teaching behaviors with the ten highest and lowest frequency of use were utilized to analyze the first research question. The second research question was similarly analyzed by using means and standard deviations to determine which clinical teaching categories had the highest and lowest frequency of use. The third and fourth research questions addressed which clinical teaching behaviors and categories had the greatest and least influence on learning. These questions were addressed via analysis of a scatterplot matrix of the means.

The fifth research question, a correlational question, was analyzed with the Pearson r. The Pearson r is a statistic designed to demonstrate directional relationships between variables (Rowntree, 2004). Both the NCTEI behaviors and categories were examined to determine if there was a relationship with the corresponding perception of

influence on learning. Assumptions for use of the Pearson r are: measurement of both variables at the interval level, distribution normality of variables, independent measures of the paired variables, and even dispersion above and below the regression line (Munro, 2005).

In this study, the normality of the variables was determined prior to calculation of the Pearson r, both variables occurred at the interval level and were measured independent of one another. Homoscedasticity was assessed by examining a scatterplot that revealed the presence of a linear relationship between the dependent and independent variables. The data in this study met all of the assumptions of the Pearson r.

An independent samples t test was used to analyze the sixth research question to determine if there was a difference in use of clinical teaching behaviors between the groups that rated their clinical experience positively versus negatively. The independent t test is appropriate for comparing two samples to determine if a difference in their means exists (Munro, 2005). The test assumes that both populations have a normal distribution; the dependent variable occurs at the interval level, the samples have equal variance, and the samples are independent of one another (Munro, 2005). Although the test statistic is robust to violations of its assumptions, extreme violations must be avoided (Corty, 2007).

In this study, the dependent variable occurred at the interval level and the samples were independent of one another. The large sample size minimized risk of error due to having a non-normal sample distribution. Levene's test for homogeneity

of variance was examined and revealed unequal variances in the sample so the t statistic for unequal variances was reported.

Summary

This chapter described the methods and procedures used to answer the research questions. The study used a nonexperimental survey, correlational design. A cross-sectional convenience sample of prelicensure students in accredited baccalaureate nursing programs in three Midwestern states was used for data collection. Following necessary approvals, data was collected from 240 students during Fall of 2009 using the Nursing Clinical Teacher Effectiveness Inventory modified to include an author developed Influence on Learning Scale and demographic section. The instrument showed initial reliability during a pilot test with 39 students. The tool had good reliability with the study data as indicated by reliability coefficients of .983 for the teaching behaviors and .974 for influence on learning. The research questions were analyzed using descriptive statistics, correlations, and independent samples t test. Statistics were calculated using Statistical Package for the Social Sciences.

CHAPTER 4: RESULTS

This chapter presents the findings of the study. A description of the sample from which the data were derived is presented. Results of the descriptive and inferential statistical analyses along with significant findings for each research question are provided. Statistical analysis was conducted using Statistical Package for the Social Sciences 15 (SPSS 15).

Demographics

The purposive sample consisted of 240 first degree, baccalaureate nursing students at three accredited, on-campus, Midwestern schools of nursing. The students were surveyed during the fall semester of 2009. Demographic information about the sample is displayed in Table 2. The participants ranged in age from 19 to 48. Seventy-seven percent of participants were in the 19 to 24 year age range. Mean age was 23.99 and the mode was 22 which are considered to be consistent with first degree nursing students attending on-campus programs.

A large majority of the participants were female (81.3%). Male participants accounted for 9.2% of the sample. Twenty three participants did not respond to the gender question.

The majority of participants had grade point averages (GPA) of 3.0 or above. Eighty-seven percent of the GPAs were in the 3.0 - 3.49 and 3.5 – 4.0 categories. It was unexpected to have only one student with a GPA below 2.5 because 2.0 was the minimum standard for good academic standing for two of the programs. It was anticipated that more than one of the study participants would have GPAs in the lower range.

Table 2

Demographic Characteristics of the Sample

Demographic	*f*	%
Age		
19-21	65	27.1
22-24	120	50.0
25-27	19	7.9
28-30	17	7.2
31-39	16	6.7
40-48	3	1.2
Gender		
Female	195	81.3
Male	22	9.2
No response	23	9.6
Grade Point Average		
2.0-2.49	1	.4
2.5-2.99	26	10.8
3.0-3.49	118	49.2
3.5-4.0	92	38.3
No response	3	1.3
Year in Program		
Sophomore	2	.8
Junior	115	47.9
Senior	123	51.3
Number of Clinical Courses		
1-2	71	29.6
3-4	54	22.5
5-6	45	19.6
7-8	34	14.2
9-10	29	12.1
11+	1	.4
No response	4	1.7

Note. N = 240

All but two students were in the junior or senior year in their respective nursing programs. This was an expected finding due to the requirement that participants had completed at least one clinical course. Each of the nursing programs

at which the study was conducted began clinical courses in the sophomore year. The survey was not administered to any sophomore students however, one program administered the survey in the first week of a new semester and it is possible that a student mistakenly indicated sophomore instead of junior as year in program.

Participants reported completion of between one and eleven clinical courses. The most frequent category was completion of one to two clinical courses (29.6%) followed by three to four clinical courses (22.5%). The number of clinical courses varied based on the organization of the respective curricula: two of the programs had more clinical courses in their curricula than did the third.

Research Question 1

The first research question asked which clinical teaching behaviors had the highest and lowest frequency of use. The clinical teaching behaviors with the highest frequency of use are depicted in Table 3, which includes the item number on the survey, a description of the teaching behavior, and the corresponding category for each teaching behavior. The teaching behaviors with the highest frequency of use were; *self-confidence, demonstrates clinical skill and judgment*, *enjoys teaching*, and *appears organized*.

Table 3

Clinical Teaching Behaviors with the Highest Frequency of Use

Item	Behavior Description	Category	M	SD
43	Self-Confidence	Personality	6.46	.99
18	Demonstrates clinical skill & judgment	Nursing Competence	6.38	.98
10	Enjoys teaching	Teaching Ability	6.38	1.15
47	Appears organized	Personality	6.33	1.15
9	Well prepared	Teaching ability	6.31	1.10
23	Demonstrates breadth of knowledge	Nursing Competence	6.30	1.04
26	Good role model	Nursing Competence	6.29	1.22
31	Communicates expectations	Evaluation	6.27	1.05
36	Is approachable	Interpersonal Relations	6.25	1.27
38	Listens attentively	Interpersonal Relations	6.24	1.17
28	Provides frequent feedback	Evaluation	6.24	1.10

Note. Item descriptions condensed for meaning.

The clinical teaching behaviors with the lowest frequency of use were: *directs students to relevant literature, reveals broad reading in his/her field, discusses current developments in the field,* and *stimulates interest in the subject*. The clinical teaching behaviors with the lowest frequency of use are presented in Table 4. The three teaching behaviors with the lowest frequency of use were all in the nursing competence category.

Table 4

Clinical Teaching Behaviors with the Lowest Frequency of Use

Item	Behavior Description	Category	M	SD
22	Directs students to relevant literature	Nursing Competence	5.17	1.56
20	Reveals broad reading in field	Nursing Competence	5.39	1.51
21	Discusses current developments	Nursing Competence	5.42	1.36
3	Stimulates interest in subject	Teaching Ability	5.62	1.28
4	Remains accessible	Teaching Ability	5.75	1.31
7	Provides practice opportunity	Teaching Ability	5.77	1.32
13	Grasps what students are asking	Teaching Ability	5.79	1.27
12	Instructs at students' level	Teaching Ability	5.79	1.25
43	Is self-critical	Personality	5.81	1.49
5	Demonstrates procedures	Teaching ability	5.81	1.26

Note. Item descriptions condensed for meaning.

Research Question 2

The second research question asked which teaching categories had the highest and lowest frequency of use. The interpersonal relationship category ranked the highest in usage followed by personality and evaluation respectively. Nursing competency and teaching ability were the lowest and second lowest scored categories. Frequencies of use of the clinical teaching categories are presented in Table 5.

Table 5

Frequencies of Use of Clinical Teaching Categories

Category	M	SD
Interpersonal Relations	6.16	1.81
Personality	6.12	1.10
Evaluation	6.03	1.03
Teaching Ability	5.96	0.88
Nursing Competence	5.87	0.98

Research Question 3

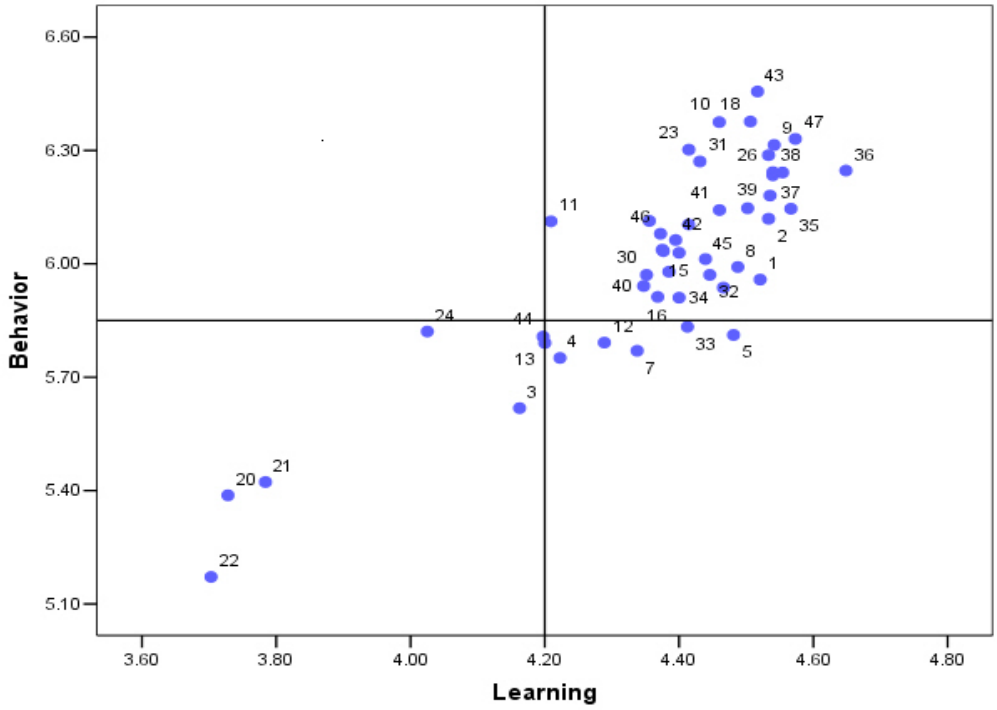
Research question 3 was: Which clinical teaching behaviors do students perceive as having the greatest and least influence on learning? This question was answered via analysis of the scatterplot in Figure 2. Clinical teaching behaviors (behavior) and influence on learning (learning) scores for each item were plotted on the matrix. Items plotted in the right upper quadrant indicate the clinical teaching behaviors that received high frequency of use scores and high influence on learning scores. The majority of survey items fell in this quadrant. Items with highest scores on both axes indicate the greatest facilitation of learning. These items and corresponding descriptors are:

- 36 Is approachable
- 47 Appears organized
- 35 Provides support and encouragement
- 28 Provides frequent feedback
- 9 Well prepared for teaching
- 37 Encourages mutual respect
- 38 Listens attentively
- 27 Makes suggestions for improvement

- 2 Emphasizes what is important
- 26 Good role model

Figure 2

Clinical Teaching Behaviors with the Greatest Influence on Learning



Items plotted in the lower right quadrant received high scores for facilitation of learning and low scores for frequency of use. These behaviors were:

- 5 Demonstrates clinical procedures
- 33 Corrects mistakes without belittling
- 7 Provides specific practice opportunity
- 12 Gears instruction to student level
- 4 Remains accessible to students

Seven items fell into the lower left quadrant. These items received low scores for both frequency of use and influence on learning. Items in this quadrant were interpreted to have the least influence on learning. These items were:

- 24 Recognizes own limitations
- 3 Stimulates interest in subject
- 21 Discusses current development in field
- 20 Reveals broad reading in field
- 22 Directs students to literature

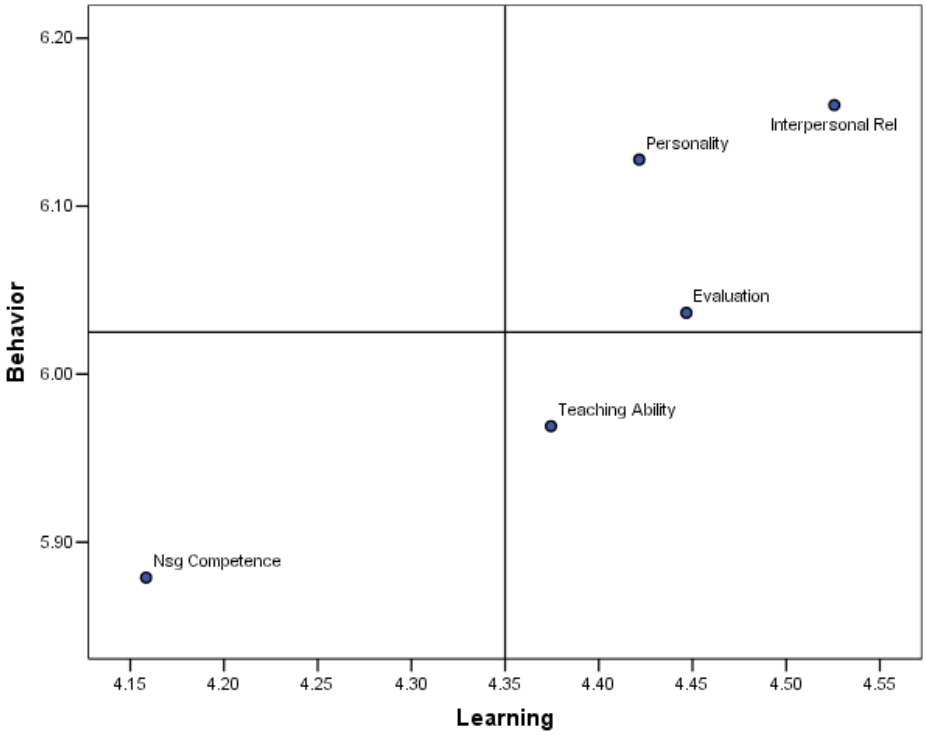
There were no behaviors in the upper left quadrant. That is, none of the items received high scores for frequency of use and low scores for influence on learning.

Research Question 4

Research question four asked which clinical teaching categories students perceived as having the greatest and least influence on learning. The clinical teaching categories were also analyzed for greatest and least influence on learning via analysis of a scatterplot matrix (See Figure 3). The mean scores for each of the five categories were plotted on a matrix with the behavior score on the vertical axis and the learning score on the horizontal axis. Interpersonal relations, personality, and evaluation categories fell in the upper right quadrant indicating high frequency of use and high facilitation of learning. Therefore, these categories indicate greatest influence on learning. The nursing competence category fell in the lower left quadrant indicating low frequency of use and low facilitation of learning. Therefore, this category was interpreted as having the least influence on learning.

Figure 3

Clinical Teaching Categories with the Greatest and Least Influence on Learning



Research Question 5

Research question five was: Is there a relationship between frequency of use of clinical teaching behaviors and influence on learning? The null hypothesis was that no relationship would be found when the data were analyzed using the Pearson product moment correlation. Table 6 presents the correlation data. A linear relationship was found. Positive correlations, significant at $p < .0001$, were found between frequency of use and influence on learning for all 47 items. Therefore, the null hypothesis was rejected.

This evidence suggests that as the use of the teaching behaviors increased, so too did facilitation of learning. The range of correlation between the highest items was

r = .762, r^2 = .581 (reveals broad reading in area of interest) to r = .701, r^2 = .491 (gives students positive reinforcement). This indicates that 58.1% and 49.1% of the facilitation of learning score was explained by the frequency of use of the respective teaching behavior.

Although the relationship was not as strong, a positive relationship also existed in the lowest correlated items. The range of correlation between the lowest items was r = .576, r^2 = .332 (communicates expectations of students), to r = .458, r^2 = .210 (questions students to elicit underlying reasoning). This indicates that 33.2% and 21% of the facilitation of learning score was explained by the frequency of use of the respective teaching behavior.

Table 6

Correlations of Behaviors with Influence on Learning

Item	Behavior Description	N	Pearson r	Sig (2-tailed)	r^2
1	Explains clearly	240	.605	.000*	.366
2	Emphasizes what is important	239	.541	.000*	.293
3	Stimulates interest in subject	237	.705	.000*	.497
4	Remains accessible	238	.646	.000*	.417
5	Demonstrates procedures	239	.540	.000*	.292
6	Guides students development skills	238	.688	.000*	.473
7	Provides practice opportunity	237	.662	.000*	.438
8	Offers special help	240	.592	.000*	.350
9	Well prepared for teaching	240	.705	.000*	.497
10	Enjoys teaching	237	.705	.000*	.497
11	Encourages participation	239	.598	.000*	.358
12	Instructs at student level	239	.645	.000*	.416
13	Grasps what students ask	239	.717	.000*	.514
14	Answers carefully	239	.647	.000*	.419
15	Questions students to elicit reasoning	240	.458	.000*	.210
16	Helps students organize thoughts	239	.611	.000*	.373
17	Promotes student independence	239	.528	.000*	.279

18	Demonstrates clinical skill and judgment	239	.544	.000*	.296
19	Demonstrates communication skills	240	.750	.000*	.563
20	Reveals broad reading in field	239	.762	.000*	.581
21	Discusses current development	236	.719	.000*	.517
22	Directs students to literature	239	.650	.000*	.423
23	Demonstrates breadth of knowledge	240	.689	.000*	.475
24	Recognizes own limitations	240	.557	.000*	.310
25	Takes responsibility for own actions	238	.553	.000*	.306
26	Good role model	240	.762	.000*	.581
27	Makes suggestions for improvement	238	.611	.000*	.373
28	Provides frequent feedback	240	.572	.000*	.327
29	Indentifies student strengths and limitations	235	.716	.000*	.513
30	Observes student performance frequently	238	.609	.000*	.371
31	Communicates expectations of students	239	.576	.000*	.332
32	Gives students positive reinforcement	240	.701	.000*	.491
33	Corrects mistakes without belittling	240	.642	.000*	.412
34	Does not criticize students in front of others	240	.635	.000*	.403
35	Provides support and encouragement	240	.642	.000*	.412
36	Is approachable	239	.665	.000*	.442
37	Encourages a climate of mutual respect	239	.698	.000*	.487
38	Listens attentively	239	.661	.000*	.437
39	Shows a personal interest in students	238	.637	.000*	.406
40	Demonstrates empathy	239	.618	.000*	.382
41	Demonstrates enthusiasm	239	.614	.000*	.377
42	Is a dynamic and energetic person	237	.711	.000*	.506
43	Self-confidence	238	.575	.000*	.332
44	Is self-critical	238	.581	.000*	.338
45	Is open-minded and non-judgmental	238	.660	.000*	.436
46	Has a good sense of humor	239	.675	.000*	.456
47	Appears organized	239	.747	.000*	.558

Note. * indicates significance at $p < .0001$

Research Question 6

Research question six was: Is there a difference in frequency of use of clinical teaching behaviors and students' reports of the experience as positive or negative? The

null hypothesis was that there was not a difference in frequency of use of clinical teaching behaviors based on rating the experience positive or negative. The survey question for this item was: *Was the clinical experience you used for this survey positive?* Response choices were, *Yes, definitely positive; yes, somewhat positive; and no, definitely not positive.* Table 7 presents responses to the positive/negative survey item. A large majority of respondents indicated they had a highly positive experience and a large number of students did not respond to the question. Nine students indicated their experience was definitely not positive, which was an insufficient number for analysis with a t test.

Table 7

Responses to Positive/Negative Item

Response Option	f	%
Yes, definitely positive	147	61.3
Yes, somewhat positive	30	12.5
No, definitely not positive	9	3.8
No response	54	22.5

Note. N = 240

Examination of the results of the *no response* group revealed that there were many very low frequency of use and influence on learning scores. A like observation was made regarding responses of the *somewhat positive* group. Close examination of the individual item responses of the thirty students who indicated their clinical experience was *somewhat positive* appeared to be similar to those who reported their experience was negative. The combined responses of the two groups provided a sufficient number for statistical analysis. Therefore, the *somewhat positive* and *not*

positive responses were combined, and analyzed for differences with the *definitely positive* group using an independent samples t test. The combined *somewhat positive* and *not positive* group were coded as *negative* for statistical interpretation. The calculation revealed a significant difference in the means between the two groups for all 47 items at $p < .01$. The null hypothesis was rejected and the alternative hypothesis that there was a difference in the means was accepted. Therefore, it can be concluded there was an increased frequency of use of the teaching behaviors in the group that rated their clinical experience as positive than existed for those who rated their experience as negative. Results of the independent samples t test are depicted in Table 8.

Table 8

Differences in Frequency of Use of Behaviors Between Positive and Negative

Item	Behavior Description	t	df	Sig. (2-tailed)
1	Explains clearly	4.447	46.122	.000**
2	Emphasizes what is important	3.195	47.405	.002*
3	Stimulates interest in subject	4.538	48.152	.000**
4	Remains accessible	3.934	44.468	.000**
5	Demonstrates procedures	3.335	51.212	.002*
6	Guides students development skills	4.249	44.234	.000**
7	Provides practice opportunity	4.072	47.766	.000**
8	Offers special help	4.410	43.395	.000**
9	Well prepared for teaching	5.036	42.224	.000**
10	Enjoys teaching	4.768	39.768	.000**
11	Encourages participation	3.764	43.907	.000**
12	Instructs at student level	5.115	42.049	.000**
13	Grasps what students ask	4.609	41.654	.000**
14	Answers carefully	5.805	41.567	.000**
15	Questions students to elicit reasoning	3.317	44.532	.002*
16	Helps students organize thoughts	4.199	46.262	.000**
17	Promotes student independence	2.781	45.083	.008*

18	Demonstrates clinical skill and judgment	3.846	42.305	.000**
19	Demonstrates communication skills	4.491	42.188	.000**
20	Reveals broad reading in field	3.014	49.199	.004*
21	Discusses current development	3.488	48.170	.001*
22	Directs students to literature	3.066	49.986	.003*
23	Demonstrates breadth of knowledge	3.903	44.851	.000**
24	Recognizes own limitations	4.804	43.530	.000**
25	Takes responsibility for own actions	5.124	42.262	.000**
26	Good role model	5.523	40.502	.000**
27	Makes specific suggestions for improvement	4.341	42.963	.000**
28	Provides frequent feedback	4.133	44.222	.000**
29	Indentifies student strengths and limitations	4.989	41.622	.000**
30	Observes student performance frequently	3.947	44.156	.000**
31	Communicates expectations of students	4.100	43.168	.000**
32	Gives students positive reinforcement	6.066	41.479	.000**
33	Corrects mistakes without belittling	5.458	42.148	.000**
34	Does not criticize students in front of others	4.751	42.540	.000**
35	Provides support and encouragement	5.477	40.641	.000**
36	Is approachable	4.853	40.048	.000**
37	Encourages a climate of mutual respect	5.410	40.169	.000**
38	Listens attentively	4.972	40.547	.000**
39	Shows a personal interest in students	4.902	42.115	.000**
40	Demonstrates empathy	5.297	41.977	.000**
41	Demonstrates enthusiasm	5.097	41.508	.000**
42	Is a dynamic and energetic person	6.037	41.550	.000**
43	Self-confidence	4.557	40.359	.000**
44	Is self-critical	5.031	44.552	.000**
45	Is open-minded and non-judgmental	7.019	40.339	.000**
46	Has a good sense of humor	5.309	42.554	.000**
47	Appears organized	4.381	41.079	.000**

Note. * $p < .01$, **$p < .0001$

Summary

This chapter explained the results used to answer the research questions. Descriptive statistics were used to describe the greatest and least frequency of use, and

influence on learning of the teaching behaviors and category subscales. Significant findings were noted for correlations and independent samples t tests. The correlations between frequency of use of the clinical teaching behaviors and influence on learning were highly significant for all 47 teaching behaviors. These results suggest that a large percent of the scores for influence on learning could be accounted for by increased use of the teaching behaviors. There was a significant difference in the frequency of use of the clinical teaching behaviors based on rating the clinical experience as positive or negative. The means of the group rating their experience as positive was statically higher than those rating their experience as negative.

CHAPTER V: DISCUSSION AND SUMMARY

This chapter will discuss the purpose of the study, research design, interpretation of results and relationship to the literature and the theoretical context, as well as implications for education and future research.

Purpose of the Study

The purpose of this correlational study was to explore the relationship of the use of clinical teaching behaviors of nursing faculty with students' perceptions of those behaviors' influence on learning. The clinical aspect of nursing education is a crucial component of the educational process. Such a critical construct demands use of the best, most effective, teaching strategies possible. Since the 1960s, nurse educators have used various tools to assess effectiveness of clinical teaching but have not demonstrated how those clinical teaching practices influenced learning. This study design illuminated the relationship between clinical teaching behaviors and influence on learning. The study further demonstrated that frequency of use of the clinical teaching behaviors had an impact on how students perceived their clinical experience.

Research Question 1

Which clinical teaching behaviors have the highest and lowest frequency of use?

The students' responses painted a picture of clinical instructors who were confident, organized, prepared and enjoyed teaching. The teachers demonstrated clinical skill, judgment, and breadth of knowledge. The instructors were good role models and communicators: they listened attentively, were approachable, communicated their expectations, and provided frequent feedback.

Due to design differences and phrasing of the survey questions in previous studies that used the NCTEI, only the results of the highest frequency of use data could be directly compared with the results from previous uses. The findings in this research question support the findings from several researchers who used a *frequency of use* type query in their surveys (Holmes, 2006; Kotzabassaki et al, 1997; Mogan & Knox, 1987; Nehring, 1990; Seih & Bell, 1994). Table 9 compares the responses. While *self-confidence* was not ranked highest by any of the other research, it ranked in the top ten in four of the studies. The only teaching behavior ranked in the top ten by each of the studies was, *demonstrates clinical skill and judgment*. Three teaching behaviors, which were in the highest frequency of use group in this study, were not in the highest-ranking group in any other NCTEI studies. Those behaviors were *demonstrates breadth of knowledge, communicates expectations of students, and provides frequent feedback.*

Differences in responses from previous studies may be related to several factors. Research design and modifications in how the survey question was phrased and presented to students would have influenced the responses. Differences in emphasis on educational preparation of clinical faculty and evolution of the clinical evaluation process during the 22 year time span over which the results were compared may also account for some of the variation in responses.

Table 9

Comparison of Highest Frequency of Use Teaching Behaviors with Previous NCTEI Studies

Behavior Description	Holmes (2006)	Kotzabassaki et al (1997)	Mogan & Knox (1987)	Nehring (1990)	Seih & Bell (1994)
Self-Confidence	X	X	X	X	
Demonstrates clinical skill & judgment	X	X	X	X	X
Enjoys teaching			X	X	
Appears organized		X			
Well prepared	X		X	X	X
Demonstrates breadth of knowledge					
Good role model	X			X	X
Communicates expectations of students					
Is approachable			X	X	X
Listens attentively		X			X
Provides frequent feedback					

The teaching behaviors that had the lowest frequency of use captured an aspect of clinical teaching that has not been previously addressed in the literature. Previous studies examined characteristics of best and worst clinical teachers but did not present data about least used teaching behaviors. The three behaviors with the lowest frequency of use, *directs students to relevant literature, reveals broad reading in*

his/her field, and *discusses current development in his/her field,* have more of a traditional academic connotation than many of the other behaviors. In the clinical practice environment, faculty may interpret these behaviors to have potential to be less well received by students than in a classroom environment and therefore may have used them less frequently.

Research Question 2

Which clinical teaching categories have the highest and lowest frequency of use?

The clinical teaching categories are a function of the clinical teaching behaviors and provide a broader view of the overall use of the teaching behaviors than do the individual response items. Interpersonal relations was the category with the highest frequency of use. This supports the findings of Nehring (1990), and Seih and Bell (1994) in which the interpersonal relations category was first and second respectively.

In this study the top three categories were interpersonal relations, personality, and evaluation. The category titles for interpersonal relations and personality are very descriptive of the items classified within. The items in the evaluation category however, are not what most educators would typically consider evaluation. Examples of behaviors in the evaluation category are: *communicates expectations of students, gives positive reinforcement, corrects mistakes without belittling,* and *does not criticize students in front of others*. Therefore, it is noted that the items in the interpersonal relations, personality, and evaluation categories are nurturing actions consistent with the overall nursing principle of caring.

Like the evaluation category, the title for the nursing competence category is not descriptive of the behaviors within. Examples of behaviors in the category are; *demonstrates clinical skill and judgment, directs students to useful literature,* and *is a good role model.* Three of the behaviors in this category were in the lowest frequency of use group, which accounts for the low frequency of the category.

Research Question 3

The third research question was: Which clinical teaching behaviors do students perceive as having the greatest and least influence on learning?

Student perceptions of how frequency of use of the teaching behaviors facilitated their learning were derived to answer this question. Teaching behaviors with the greatest influence on learning were *is approachable, appears organized, provides support and encouragement, provides frequent feedback,* and *well prepared for teaching*. Teaching behaviors with the least influence on learning were *recognizes own limitations, stimulates interest in the subject, discusses current development in the field, broad reading,* and *directs students to literature*. Studies that addressed students' perceptions of the influence of teaching behavior on learning could not be found.

The teaching behavior with the highest influence on learning score involved the teacher being approachable. Although Wilson (1994) did not study influence on learning directly, her finding that students have a tendency to deplete all other options before approaching the instructor is supported by this current result.

The teaching behaviors with the least influence on learning were ones that are more academic in nature. In the practice environment, students generally place less

value on abstract constructs and further independent reading than they do on more action-oriented measures.

Research Question 4

Which clinical teaching categories do students perceive as having the greatest and least influence on learning?

The category with highest influence on learning was interpersonal relations. Behaviors in the evaluation category had a lower incidence of use but scored higher on influence on learning. Behaviors in the personality category were used more frequently but had a slightly lower mean for influence on learning. The teaching behaviors in these three categories are all actions that demonstrate respect and caring professionalism toward students. As a combined group, these three categories indicate that the caring and nurturing actions of clinical teachers had a greater influence on learning than did teaching ability and nursing competence. These findings lend support to previous studies which identified the student-teacher relationship to be a major factor in the clinical learning environment (Barham, 1965; Brown, 1981, Cooke, 1999; Espeland & Indrehus, 2003; Gillespie, 2002; Kelly, 2007; Lofmark & Wikblad, 2001; Oermann & Lukomski, 2002; O'Shea & Parsons, 1979; Papp, Markkanen & von Bonsdorff, 2003; Poorman, Webb, & Mastorovich, 2002; Ripley, 1986; Sellick & Kanitsaki, 1991; Viverais-Dresler & Kutschke, 2001; Wilson, 1994; Wong; 1978). It was not surprising that student responses reflected a very high regard for caring actions directed toward them considering that caring is a core value of nursing practice.

Research Question 5

Is there a relationship between frequency of use of clinical teaching behaviors and students' perceptions of those behaviors' influence on learning?

The findings indicated there was a positive relationship between frequency of use of each clinical teaching behavior and students' perceptions of the behavior's influence on learning. The NCTEI was derived from a qualitative analysis of pre-collected data from an existing teacher evaluation form (Mogan & Knox, 1983; Knox & Mogan, 1985). Forty-seven clinical teaching behaviors were extrapolated from responses regarding teacher effectiveness and transposed into a quantitative tool to assess nursing clinical teacher effectiveness. An underlying premise of the tool was that teacher effectiveness equated with student learning (Knox & Mogan, 1985) however, no research could be found that provided support for this assertion. The findings of this study provide initial confirmation that use of the clinical teaching behaviors facilitate learning. Further, the results indicated that as the frequency of use of behaviors went up, so too did the facilitation of learning.

Some of the correlations were remarkably high. The highest correlation coefficient was $r = .762$, $r^2 = .581$, indicating that 58.1% of the effect in facilitation of learning could be accounted for by the frequency of use of the teaching behavior. Only four of the behaviors with the highest correlation coefficients were in the highest frequency of use grouping. The two behaviors with the highest correlations were, *reveals broad reading in area of interest* and, *is a good role model* ($r = .762$, $r^2 = .581$). *Good role model* was in the highest frequency of use group and *reveals broad reading* was the second lowest in the low group. Four of the items with the lowest correlations

had the highest frequencies of use, including *self-confidence*, which had the highest frequency of use score in the study. This leads to the conclusion that some factor, inherent in the behavior itself, was responsible for the facilitation of learning and the effect was not simply a function of the frequency of use alone.

The number of items in the study with large effect size was substantial: only one item was beneath the threshold for large effect size described by Corty (2007). That item was, *questions students to elicit underlying reasoning* ($r = .458$, $r^2 = .210$). The sizeable number of items with large effect size indicates strength of the tool in measurement of relationships and potential to predict relationships using regression.

Research Question 6

This research question was: Is there a difference between frequency of use of clinical teaching behaviors and students' reports of the experience as being positive or negative?

Only nine students selected the *definitely not positive* option for this item, which was insufficient for statistical analysis. A large number (54) of students did not respond to this question. There are many possible reasons for this high non-response rate. First, students may not have responded to this item because it was the last item on the survey and appeared physically different from the previous 47 items, so may have concluded that they had completed their surveys. Second, although extensive effort was undertaken to assure anonymity and confidentiality of individual results, students may have feared that course or program faculty might view their responses. The use of paper surveys may have contributed to this concern. Use of an online survey tool may

have ameliorated anonymity concerns and prevented the final question from being overlooked or avoided.

The low number of respondents indicating their clinical experience was negative may have been a true measure of students' perceptions toward their clinical experience. It is also plausible that students selected *no response* or *somewhat positive* because they did not want their responses to appear offensive or negative.

Examination of the results of the *no response* group revealed that there were many very low frequency of use and influence on learning scores. This was also true of the responses of the *somewhat positive* group. Upon close examination of survey results of the *somewhat positive* and *not positive* groups, the responses appeared similar. Consequently, the responses of the *somewhat positive* and *not positive* groups were combined for statistical analysis because the responses of the two appeared similar.

That analysis showed a significant difference in the means of the two groups, indicating that the frequency of use of the teaching behaviors had an impact on how students perceived the nature of the clinical experience. Students whose instructors used the clinical teaching behaviors more frequently, perceived their clinical experience as being more positive. This finding directly supports Ripley's (1986) correlational study, which found a strong correlation between student attitudes toward clinical experience and inviting behaviors of instructors.

There are innumerable variables other than clinical teaching behaviors that have potential to influence students' perceptions of their clinical experience being positive or negative. Designing a study capable of absolute control of those variables

in a live clinical experience is incomprehensible. The design of this study attempted to have participants self control for some of those variables by asking about the positive/negative aspect of their clinical experience along with questions about teacher behavior. However, the survey question did not specifically request that the item be answered from that perspective. The positive clinical experiences could have been positive because of such incidents as a very caring encounter with a client or a compliment from a physician. The experience could have been negative due to such factors as a chaotic unit environment or personal stresses related to family life. In light of these concepts, a tentative conclusion is that this finding lends support to the work of those who have examined student stress and anxiety in clinical and provided recommendations for faculty support of students in clinical experience (Beck, 1991; Cook, 2005; Elcigil & Yldrim, 2008; Fink, 2005; Gillespie, 2002; Kleehammer, Hart, & Keck, 1990; Kushnir, 1986; Ripley, 1986).

Relationship to Theoretical Framework

Bandura's social learning theory describes an internal process of learning, able to be known to the learner, which involves reciprocal determination, modeling and self-efficacy (Bandura, 1977). Applicability of these components of the theory were evident in this study.

The learners were clearly able to identify and rate the facilitation of their own learning. The influence on learning Likert scale provided a unit of measure of facilitation of learning and all five options on the scale were used by the study participants. The short time it took for students to complete the survey (7-12 minutes)

indicated that self awareness of learning and influences which affected it were readily available to them and did not require extensive reflection.

The study was designed to reflect reciprocal determination and not to measure it directly. The interplay of multiple variables, especially the teaching behaviors of the nursing faculty, were examined by asking students to select one clinical experience with one clinical instructor for the survey responses. As students worked through the 47 teaching behaviors a picture emerged of the effect of the teaching behavior on student learning. The findings indicated that students were able to interpret the effect of teaching behavior on their learning.

Modeling is a significant component of social learning (Bandura, 1977). Application of this construct was evident in the prominent position of role modeling in the results. Being a good role model was in the top 10 for both frequency of use and correlation. This provides evidence that role modeling lead to learning and, subsequently, a change in behavior.

Self-efficacy beliefs are views one has about one's own ability that influence one's ability to achieve (Bandura, Adams, & Beyer, 1977). This study demonstrated that the caring, nurturing teaching behaviors had a significant influence on learning. Such caring actions tend toward decreasing stress and anxiety in the clinical situation and increasing self-efficacy beliefs of students.

Delimitations

Delimitations of this study are related to the sample. This study was conducted using a single, purposive sample of first degree baccalaureate nursing students attending on-campus programs. No attempt was made to collect data from other types

of programs. Further, the study was conducted at three colleges in the Midwest. Therefore, the ability to generalize these results to all nursing students is limited.

Limitations

Although care was taken to assure rigor of the study design, several limitations can be identified. Statistically significant differences and correlations were reported that have not been found in the literature reviewed for this study. Some of the findings were highly significant, such as a correlation that accounted for 58.1% of variance. Due to the nature of nursing clinical experience, there are a multitude of variables other than clinical teaching behaviors that may have contributed to the significance of the results. While some of those variables are named herein, many unknown factors may plausibly have existed and interplayed with the variables being studied.

Responses to the item regarding perception of the experience as positive or negative may have been influenced by several factors. First, it seems logical to assume students who had very positive or very negative clinical experiences would consent to participate. An unknown variable is if a higher proportion of these students consented than students who had perception of their experience as average. Second, it is not known if the experiences the students selected for completion of the survey were representative of their overall clinical experiences or if they were isolated incidents. Third, this item was the last item on the survey and had a different physical appearance than the preceding 47 items. Students may have skipped over this item, thinking it was an ending statement, or simply tired of the survey and left it unanswered in order to complete the survey quickly. The responses of the 54 students who left this item blank may have had a significant impact on the findings. Fourth,

even though the survey procedures informed the students that no one from their college would associate their responses with their name, students may have had concerns in this regard and altered their responses accordingly.

The surveys were distributed on breaks during class periods. Stressors of time, peer pressure, and personal issues may have influenced the amount of consideration students gave to completion of the survey. It is plausible that some students may have provided impulsive responses that did not reflect their true opinions in an attempt to complete the survey quickly. The surveys in which students selected the same response for all 47 items on both scales brings this option into question.

Recommendations for Education

Examination of clinical teaching practices is warranted by this study. The purpose of clinical practice experience is for students to learn how to become nurses. To that end, it is vital that teaching strategies that are most effective be utilized. Nurse educators should use the NCTEI as a self-assessment and seek to incorporate behaviors not previously used, or used infrequently, into their practice. The tool has been determined to be effectual at what it was originally designed to do – assess clinical teacher effectiveness. Incorporation of the tool into routine teacher evaluation could serve to be a valuable strategy to enhance the quality of clinical teaching in nursing.

The findings of this study provide evidence that should be used in the education of future educators. Nursing is a practice profession and the time is overdue for nursing education curricula to reflect the primacy of practice in the preparation of nurse educators. Graduate programs for nurse educators should include courses on

clinical education into their curricula. Graduate students in nursing education should use the results of this study, and others related to clinical teaching, as a basis from which to advance the body of evidence on clinical teaching.

Finally, the results of this study would be very helpful in the orientation of novice nurse educators. In 2010, the practice of nursing education is not restricted to those with formal credentials in the field of education. Consequently, expert nurses with graduate credentials in other areas of emphasis, such as administration and nurse practioner, are hired to the role of educator and unleashed on nursing students. This is not to say that these esteemed colleagues will be poor educators. However, to achieve excellence in nursing education, it is imperative that extensive orientation to the principles and evidence based practices of clinical teaching be incorporated.

Future Research

Several recommendations for future research can be derived from this study. First, the results of this study are an initial finding of correlation of clinical teaching behaviors to facilitation of learning. Replication of this study with a broader student demographic and geographic area is needed to confirm the results. Second, the NCTEI contains a number of items that are similar and some of the category names are not clearly reflective of the intent of the items within, namely the evaluation category. Refinement of the instrument by combining similar items, factor analysis, and renaming categories would aid in providing a more user friendly and discriminating tool.

Finally, many of clinical teaching behaviors involve eliciting information from students and providing feedback. Although, these actions clearly contribute to the

teaching-learning process, they are also evaluative actions. The nature of clinical education requires the instructor to take the dual role of teacher and evaluator. Specific actions that constitute clinical evaluation have not been clearly delineated and need to be identified. Studies that differentiate teaching from evaluation are sorely needed to clarify practice for faculty and to help alleviate student stress regarding perceptions that their teachers are in constant evaluation mode (Kushnir, 1986; Morgan, 1991; Wilson, 1994).

Summary

This study demonstrated a relationship between use of documented teaching behaviors and influence on learning that has not been reported in the literature. The study findings also indicated that frequency of use of the teaching behaviors affected how students perceived their clinical experiences. Although these findings need to be confirmed, they provide grounds for looking at clinical teaching in a new light.

These findings provide impetus for all clinical educators to examine their own practice. Nurse educators have a responsibility to provide nursing students with clinical instruction that is most effective at facilitating learning. Opportunities to implement teaching behaviors that are most effective should be seized at every possible juncture. Nursing education as an entity must examine curricula and orientation programs for educators that incorporate evidence-based practices for clinical teaching. Educators should endeavor to explore clinical teaching and evaluation practices that will enhance the learning process. These actions will

maximize opportunities for nursing students to learn, and therefore to succeed in becoming professional nurses.

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Appendix A

Invitation to Participate

IRB # CSM 08-111
Date Approved 7/16/2009
Valid Until: 7/16/2010

STUDENT PERCEPTION OF THE INFLUENCE OF NURSING CLINICAL TEACHING BEHAVIORS ON LEARNING

IRB # 08-111

Dear Nursing Student,

You are invited to take part in a research study because you are an undergraduate nursing student who has completed at least one clinical course. The purpose of this study is to explore the relationship of nursing faculty clinical teaching behaviors to student learning. This research study is being conducted as part of the requirements of the researcher(s)'s doctorate in health professions education program at College of Saint Mary.

You may receive no direct benefit from participating in this study, but the information gained will be helpful to nursing educators in determining which clinical teaching behaviors are most effective in facilitating student learning.

Should you decide to participate you are being asked to complete the following survey which should take approximately 10-15 minutes to complete. Your participation is strictly voluntary. Furthermore, your response or decision not to respond will not affect your relationship with College of Saint Mary or any other entity. Please note that your responses will be used for research purposes only and will be strictly confidential. No one at College of Saint Mary will ever associate your individual responses with your name or email address. The information from this study may be published in journals and presented at professional meetings.

Your completion and submission of the questionnaire indicate your consent to participate in the study. You may withdraw at any time by not completing or submitting the survey. This study does not cost the participant in any way, except the time spent completing the survey. There is no compensation or known risk associated with participation. Please read *The Rights of Research Participants* below. If you have questions about your rights as a research participant, you may contact the College of Saint Mary Institutional Review Board, 7000 Mercy Road, Omaha, NE 68144 (402-399-2400).

Thank you sincerely for participating in this important research study. If you have comments, problems or questions about the survey, please contact the researcher.

If you are 19 years of age or older and agree to the above please proceed to the survey. When finished, please place your survey in the designated envelope in the room.

Sincerely,
Marcia Kube, MA, MSN, RN
mkube74@csm.edu

Appendix B

The Rights of Research Participants

COLLEGE OF SAINT MARY

THE RIGHTS OF RESEARCH PARTICIPANTS*

AS A RESEARCH PARTICIPANT ASSOCIATED WITH COLLEGE OF SAINT MARY YOU HAVE THE RIGHT:

1. TO BE TOLD EVERYTHING YOU NEED TO KNOW ABOUT THE RESEARCH BEFORE YOU ARE ASKED TO DECIDE WHETHER OR NOT TO TAKE PART IN THE RESEARCH STUDY. The research will be explained to you in a way that assures you understand enough to decide whether or not to take part.

2. TO FREELY DECIDE WHETHER OR NOT TO TAKE PART IN THE RESEARCH.

3. TO DECIDE NOT TO BE IN THE RESEARCH, OR TO STOP PARTICIPATING IN THE RESEARCH AT ANY TIME. This will not affect your relationship with the investigator or College of Saint Mary.

4. TO ASK QUESTIONS ABOUT THE RESEARCH AT ANY TIME. The investigator will answer your questions honestly and completely.

5. TO KNOW THAT YOUR SAFETY AND WELFARE WILL ALWAYS COME FIRST. The investigator will display the highest possible degree of skill and care throughout this research. Any risks or discomforts will be minimized as much as possible.

6. TO PRIVACY AND CONFIDENTIALITY. The investigator will treat information about you carefully and will respect your privacy.

7. TO KEEP ALL THE LEGAL RIGHTS THAT YOU HAVE NOW. You are not giving up any of your legal rights by taking part in this research study.

8. TO BE TREATED WITH DIGNITY AND RESPECT AT ALL TIMES.

THE INSTITUTIONAL REVIEW BOARD IS RESPONSIBLE FOR ASSURING THAT YOUR RIGHTS AND WELFARE ARE PROTECTED. IF YOU HAVE ANY QUESTIONS ABOUT YOUR RIGHTS, CONTACT THE INSTITUTIONAL REVIEW BOARD CHAIR AT (402) 399-2400.

***ADAPTED FROM THE UNIVERSITY OF NEBRASKA MEDICAL CENTER , IRB WITH PERMISSION**

7000 Mercy Road • Omaha, NE 68106-2606 • 402.399.2400 • FAX 402.399.2341 • www.csm.edu

Appendix B

Nursing Clinical Teacher Effectiveness Inventory with Influence on Learning Scale

Nursing Clinical Teacher Effectiveness Inventory with Influence on Learning Scale

Your age_____

Number of clinical courses completed _____ (to the best of your knowledge)

Gender: Female Male (please circle one)

GPA: 2.0-2.49 2.5-2.99 3.0-3.49 3.5-4.0 (please circle one)

Year/level in program: Freshman Sophomore Junior Senior (please circle one)

This is a survey about clinical teaching behaviors of nursing faculty and how those behaviors influence your clinical learning. Think of a clinical instructor who was with you during a recent clinical experience. Use that **one experience and one instructor** for each rating on the next pages

The clinical teaching behaviors are in the center column. You will rate each behavior using the scales on both the left and right side of each behavior.

Please go to the next page

Section A: Identify how frequently your clinical instructor used each clinical teaching behavior. Use the 7 point scale in the left column. 1 indicates the behavior was NEVER used. 7 indicates the behavior was ALWAYS used. You may use any of the numbers on the scale.

Section B: Identify how the frequency of use of the clinical teaching behavior helped your learning. Use the 5 point scale in the far right column. 1 indicates that how frequently the behavior was used did NOT help your learning at all. 5 indicates how frequently the behavior was used helped your learning A GREAT DEAL.

Section A: My Instructor How frequently my instructor used the clinical teaching behavior. Never → Always							**Clinical Teaching Behaviors**	**Section B:** My Learning How the frequency of use of the teaching behavior **helped** my learning. Not at all → A great deal				
1	2	3	4	5	6	7	Explains clearly	1	2	3	4	5
1	2	3	4	5	6	7	Stimulates what is important	1	2	3	4	5
1	2	3	4	5	6	7	Stimulates student interest in the subject	1	2	3	4	5
1	2	3	4	5	6	7	Remains accessible to students	1	2	3	4	5
1	2	3	4	5	6	7	Demonstrates clinical procedures and techniques	1	2	3	4	5
1	2	3	4	5	6	7	Guides students' development of clinical skills	1	2	3	4	5
1	2	3	4	5	6	7	Provides specific practice opportunity	1	2	3	4	5
1	2	3	4	5	6	7	Offers special help when difficulties arise	1	2	3	4	5
1	2	3	4	5	6	7	Is well prepared for teaching	1	2	3	4	5
1	2	3	4	5	6	7	Enjoys teaching	1	2	3	4	5
1	2	3	4	5	6	7	Encourages active participation in discussion	1	2	3	4	5
1	2	3	4	5	6	7	Gears instruction to students' level of readiness	1	2	3	4	5
1	2	3	4	5	6	7	Quickly grasps what students are asking or telling	1	2	3	4	5
1	2	3	4	5	6	7	Answers carefully and precisely questions raised by students	1	2	3	4	5
1	2	3	4	5	6	7	Questions students to elicit underlying reasoning	1	2	3	4	5
1	2	3	4	5	6	7	Helps students organize their thoughts about patient problems	1	2	3	4	5
1	2	3	4	5	6	7	Promotes student independence	1	2	3	4	5
1	2	3	4	5	6	7	Demonstrates clinical skill and judgment	1	2	3	4	5
Please go to the next page →												

Section A: Identify how frequently your clinical instructor used each clinical teaching behavior. Use the 7 point scale in the left column. 1 indicates the behavior was NEVER used. 7 indicates the behavior was ALWAYS used. You may use any of the numbers on the scale.

Section B: Identify how the frequency of use of the clinical teaching behavior helped your learning. Use the 5 point scale in the far right column. 1 indicates that how frequently the behavior was used did NOT help your learning at all. 5 indicates how frequently the behavior was used helped your learning A GREAT DEAL.

Section A: My Instructor How frequently my instructor used the clinical teaching behavior. Never → Always							**Clinical Teaching Behaviors**	**Section B:** My Learning How the frequency of use of the teaching behavior **helped** my learning. Not at all → A great deal				
1	2	3	4	5	6	7	Demonstrates communication skills	1	2	3	4	5
1	2	3	4	5	6	7	Reveals broad reading in his/her area of interest	1	2	3	4	5
1	2	3	4	5	6	7	Discusses current development in his/her field	1	2	3	4	5
1	2	3	4	5	6	7	Directs students to useful literature in nursing	1	2	3	4	5
1	2	3	4	5	6	7	Demonstrates a breadth of knowledge in nursing	1	2	3	4	5
1	2	3	4	5	6	7	Recognizes own limitations	1	2	3	4	5
1	2	3	4	5	6	7	Takes responsibility for own actions	1	2	3	4	5
1	2	3	4	5	6	7	Is a good role model	1	2	3	4	5
1	2	3	4	5	6	7	Makes specific suggestions for improvement	1	2	3	4	5
1	2	3	4	5	6	7	Provides frequent feedback on students' performance	1	2	3	4	5
1	2	3	4	5	6	7	Identifies students' strengths and limitations objectively	1	2	3	4	5
1	2	3	4	5	6	7	Observes students' performance frequently	1	2	3	4	5
1	2	3	4	5	6	7	Communicates expectations of students	1	2	3	4	5
1	2	3	4	5	6	7	Gives students positive reinforcement for good contributions, observations or performance	1	2	3	4	5
1	2	3	4	5	6	7	Corrects students' mistakes without belittling them	1	2	3	4	5
1	2	3	4	5	6	7	Does not criticize students in front of others	1	2	3	4	5
1	2	3	4	5	6	7	Provides support and encouragement to students	1	2	3	4	5
Please go to the next page →												

Section A: Identify how frequently your clinical instructor used each clinical teaching behavior. Use the 7 point scale in the left column. 1 indicates the behavior was NEVER used. 7 indicates the behavior was ALWAYS used. You may use any of the numbers on the scale.

Section B: Identify how the frequency of use of the clinical teaching behavior helped your learning. Use the 5 point scale in the far right column. 1 indicates that how frequently the behavior was used did NOT help your learning at all. 5 indicates how frequently the behavior was used helped your learning A GREAT DEAL.

Section A: My Instructor How frequently my instructor used the clinical teaching behavior. Never → Always							**Clinical Teaching Behaviors**	**Section B:** My Learning How the frequency of use of the teaching behavior **helped** my learning. Not at all → A great deal				
1	2	3	4	5	6	7	Is approachable	1	2	3	4	5
1	2	3	4	5	6	7	Encourages a climate of mutual respect	1	2	3	4	5
1	2	3	4	5	6	7	Listens attentively	1	2	3	4	5
1	2	3	4	5	6	7	Shows a personal interest in students	1	2	3	4	5
1	2	3	4	5	6	7	Demonstrates empathy	1	2	3	4	5
1	2	3	4	5	6	7	Demonstrates enthusiasm	1	2	3	4	5
1	2	3	4	5	6	7	Is a dynamic and energetic person	1	2	3	4	5
1	2	3	4	5	6	7	Self -confidence	1	2	3	4	5
1	2	3	4	5	6	7	Is self-critical	1	2	3	4	5
1	2	3	4	5	6	7	Is open-minded and non-judgmental	1	2	3	4	5
1	2	3	4	5	6	7	Has a good sense of humor	1	2	3	4	5
1	2	3	4	5	6	7	Appears organized	1	2	3	4	5

Was the clinical experience you used for this survey positive? (Please circle one)	**Yes, definitely**	**Yes, somewhat**	**No**

Please return your completed survey to the proctor.
Thank you!

Appendix B

Pilot Study Reliability Data

Pilot Study Reliability Data

Cronbach's Alpha Coefficients for Category Subscales

Category	Alpha Coefficient	Number of Items in Category
Teaching Ability		17
Teaching Behavior	.941	
Learning Influence	.900	
Nursing Competence		9
Teaching Behavior	.904	
Learning Influence	.885	
Evaluation		8
Teaching Behavior	.921	
Learning Influence	.911	
Interpersonal Relationships		6
Teaching Behavior	.835	
Learning Influence	.867	
Personality Traits		7
Teaching Behavior	.932	
Learning Influence	.870	