Evaluation of Clinical Growth and Nursing Student Motivation in the Traditional Clinical Learning Environment

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EVALUATION OF CLINICAL GROWTH AND NURSING STUDENT
MOTIVATION IN THE TRADITIONAL CLINICAL
LEARNING ENVIRONMENT

by

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ABSTRACT
EVALUATION OF CLINICAL GROWTH AND NURSING STUDENT
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Evaluation of students in the traditional clinical learning environment is difficult. There remains a lack of standard guidelines to evaluate students using valid and reliable instruments as well as inconsistent processes with lack of interrater reliability standards between educators. A need exists for fair and consistent evaluation of nursing students. When the clinical educator uses a standard evaluation process and understands students' motivation for learning, adaptations in teaching strategies and education on self-regulatory strategies can be implemented to enhance learning and measure clinical growth.

This research study used a prospective, correlational, pre-test/post-test design to examine the relationship between student motivation and clinical growth and to measure the concept of clinical growth. Nonprobability sampling with multisite, convenience samples was used. Participants came from three schools of nursing in a large Midwestern city. The schools had similar, traditional 8-semester Bachelor of Science in Nursing degree programs that included 7th and 8th semester students enrolled in a clinical course that included a minimum of 80 hours. Training occurred for clinical educators on the use of the Creighton Competency Evaluation Instrument (CCEI) before data collection occurred for each school.

The findings from the study indicate a statistically significant difference in both educator assessment of the students using the CCEI scores from Time 1 ($M = .52$, $SD = .25$) to Time 2 ($M = .84$, $SD = .16$), $t_{(71)} = -13.28$, $p < .001$ and student self-assessment CCEI scores from Time 1 ($M = .72$, $SD = .21$) to Time 2 ($M = .90$, $SD = .12$), $t_{(71)} = -7.90$, $p < .001$. The expectancy and value components of motivation were not significantly related to students' clinical growth when assessed by educators or students. However, when specific components of motivation were examined, task value was negatively associated with both student and educator change scores and intrinsic goal orientation was significantly associated with educator change scores. The relationship between educator and student clinical growth scores was not statistically significant indicating a small, negative correlation, $r = -.11$, $n = 72$, $p = .34$. The findings from this study suggest that using a standard process for assessment in the traditional clinical learning environment with the CCEI is fair and objective for students. Further exploration of motivation relating to clinical growth is warranted.

ACKNOWLEDGMENTS

Jessica Barkimer, MSN, RN, CNE

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I INTRODUCTION

Background of the Study

Nursing students have exposure to challenging experiences in traditional clinical learning environments. This learning occurs in a complex social context of unpredictable experiences with patients, nurses, and members of other disciplines (Chan, 2003), increasing technological advances, hazardous work environments (Benner, Sutphen, Leonard, & Day, 2010), and increasing patient acuity (Benner et al., 2010; Tanner, 2006a). Within this complex and challenging atmosphere, it is important for an educator to contextually understand a student's motivation for learning. This knowledge allows the educator to make informed adaptations to enhance learning, promote the attributes of clinical growth (Barkimer, 2016) in the traditional clinical learning environment, and objectively assess competency. The terms evaluation and assessment are often used interchangeably in the literature, however, assessment was selected for use in this study.

Promoting clinical competence and patient safety are essential outcomes for undergraduate nursing students during their education (Lenburg, Abdur-Rahman, Spencer, Boyer, & Klein, 2011). However, there still remains a lack of consistent understanding and standard guidelines to evaluate students using valid and reliable instruments in addition to inconsistent evaluation processes with lack of interrater reliability standards between educators when performing evaluations in the traditional clinical environment (Bourbonnais, Langford, & Giannantonio, 2008; Hooper, Benton, Mancini, & Yoder-Wise, 2016). Furthermore, a need exists for fair and consistent evaluation of nursing students (Hayden, Keegen, Kardong-Edgren, & Smiley, 2014a; Hsu & Hsieh, 2013; Ulfvarson & Oxelmark, 2012). Currently, several challenges persist

including a lack of clear and consistent expectations communicated to both educators and students. Finally, there is a need to examine student motivation in the context of the clinical learning environment.

Motivation is an intrinsic student characteristic that must be present for a student to grow in the traditional clinical learning environment (Barkimer, 2016). To promote academic achievement, students must demonstrate motivation to regulate effort and cognition (Pintrich, 1988; Pintrich, 1989). Although it is clear that student motivation is necessary for clinical growth to occur, there is no information in the literature on the characteristics of motivation that are most efficacious and how much influence motivation might have on the process of clinical growth or on clinical competency.

Student motivation includes two areas; a value and an expectancy component. The value component of motivation addresses a student's values and beliefs for a course, and the expectancy component of motivation includes beliefs regarding the ability to succeed in a course (Pintrich, Smith, Garcia, & McKeachie, 1991). Understanding the role of motivation as it relates to clinical growth allows an educator to tailor teaching and learning strategies to foster student growth and development. Motivation has been widely studied in the educational and health science fields (Ali, Hatala, Winne, & Gašević, 2014; Elder, Jacobs, & Fast, 2015; Linnenbrink & Pintrich, 2002; Pintrich, 2004; Radovan & Makovec, 2015) and has been identified as a requirement for academic success. This research study investigated the key concepts of clinical growth, clinical competency, and nursing student motivation.

Statement of the Problem

Evaluation of nursing students in the traditional clinical learning environment includes challenges such as educator bias and subjectivity (Krautscheid, Moceri, Stragnell, Manthey, & Neal, 2014; Levett-Jones, Gersbach, Arthur, & Roche, 2011). To offset these challenges, educators need clear evaluative criteria, a standardized evaluation process, and valid and reliable tools (Amicucci, 2012; DeBrew & Lewallen, 2014). Addressing the need for a fair and consistent evaluation process with a valid and reliable instrument provides nursing students and educators the opportunity to promote academic success in the traditional clinical learning environment.

Motivation is another necessary component to promote academic success. In a concept analysis, Barkimer (2016) revealed that motivation is an antecedent that influences development of clinical growth in the traditional clinical learning environment. Understanding a student's motivation for academic success allows an educator to help facilitate clinical growth and competency. Students are motivated in a variety of ways and identifying the type of motivation that they may or may not use can assist an educator in helping students to select an appropriate motivational self-regulatory strategy (Pintrich, 2004). Consequently, it is crucial to understand what motivates students in the traditional clinical learning environment to facilitate their clinical growth and clinical competency.

This research study used an evaluation instrument to assess clinical competency and clinical growth with a focus on patient safety. This instrument, the Creighton Competency Evaluation Instrument (CCEI) (Hayden, et al., 2014a), is an evaluation tool divided into four categories: assessment, communication, clinical judgment, and patient

safety and incorporates principles from Quality and Safety Education for Nurses (QSEN) as its foundation (Cronenwett et al., 2007). Use of such an evaluation instrument that incorporates QSEN principles is important to educators because of the need to prepare students for a practice that promotes safe and quality patient care (AACN, 2008) and focuses on the national patient safety goals (Joint Commission, 2018). Four of the seven national patient safety goals align to items found in the CCEI (Appendix A); identify patients correctly, improve staff communication, uses medicines safely, and prevent infection. Therefore, the CCEI was selected to assess clinical competence and clinical growth of nursing students in these areas, within the context of the traditional clinical setting.

The *Essentials of Baccalaureate Education for Professional Nurse Practice* (AACN, 2008) articulates the essential knowledge and core concepts required by graduates of baccalaureate degree nursing programs. At the completion of a baccalaureate (BSN) program, nursing students are expected to "incorporate evidence-based practices, promote safe and quality patient care, utilize higher-level thinking such as critical thinking and clinical reasoning and judgment to respond to simple or complex situations, engage in continuous professional development as a lifelong learner among other identified assumptions" (AACN, 2008, p.8). An evaluation instrument, such as the CCEI, could help determine whether nursing students are meeting these necessary requirements upon graduation.

Traditional Clinical Learning Environment

Traditional clinical learning environments provide powerful learning opportunities for students, especially when coupled with an educator who has the ability

to emphasize the classroom content in the clinical setting or pull out salient information from clinical situations when teaching in the classroom setting (Benner et al., 2010). Advances in healthcare and technology continue to evolve at a rapid pace, requiring educators to prepare students differently than in past years. Students must be ready to integrate skills and knowledge with ethical considerations in highly unpredictable situations and be dedicated to lifelong learning (AACN, 2008; Benner et al., 2010; IOM, 2010).

The traditional clinical learning environment provides the student with the necessary context to develop higher-level thinking skills such as clinical reasoning and clinical judgment. In this environment, a student must consider the patient's unique past medical history, current physiological conditions, social situation, trends in health assessment findings and lab values. This environment provides an opportunity for students to work with humans and attempt to recognize the salient information within the context of the patient and the dynamic environment (Benner et al., 2010). As an alternative method for clinical learning, studies have shown evidence for simulation as an acceptable clinical setting to promote student learning (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014b; Hudgins, 2017; Ironside, Jeffries, & Martin, 2009; Liaw, Palham, Chan, Wong, & Lim, 2015). Simulation provides educators the opportunity to control the experiences and expose students to the complexity and unpredictability of the traditional clinical setting while under the supervision and guidance of educators to develop the student's higher-level thinking skills. Although simulation has been shown to be an effective replacement for up to half of traditional clinical hours by producing new graduates who are as ready for clinical practice (Hayden

et al., 2014b), the traditional clinical environment is a less predictable yet more realistic situation that is also important for preparation for practice.

The National League for Nursing (NLN) recommends "testing of instruments for nursing education research to measure learning outcomes and linkages to patient care" and to create "multi-site, multi-method research designs that address critical education issues," such as clinical competency (NLN, 2016a, p.2). Use of the CCEI to assess clinical competency and clinical growth in a traditional clinical environment is important given the need to establish a fair and consistent process for student clinical evaluation that addresses patient care quality and safety. Furthermore, understanding nursing student's motivation in the context of the traditional clinical learning environment provides data educators can use to enhance learning and support the student in the process of clinical growth.

Motivation

Student motivation matters in learning (Cook, Thompson, & Thomas, 2011). Providing educators insight into students' motivation creates an opportunity to enhance student learning, facilitate academic success (Linnenbrink & Pintrich, 2002), and promote clinical growth and clinical competence. The Motivated Strategies for Learning Questionnaire (MSLQ) is an instrument designed to assess college students' motivational orientation in a specific context (Appendix B). The scores from the MSLQ provide educators useful information to help students with their motivation (Pintrich, Smith, Garcia, & McKeachie, 1991). An educator who understands a student's motivation has the ability to increase a student's awareness of motivational self-regulatory strategies. Motivational self-regulatory strategies that students can elect to use include positive self-talk, extrinsic rewards, and making learning experiences relevant (Pintrich, 2004).

Furthermore, educators can change instructional activities and design based on student motivation to facilitate academic achievement (Linnenbrink & Pintrich, 2002). Understanding a student's motivation through the social cognitive lens provides information that can be used to design a future intervention, promote self-selection of motivational self-regulatory strategies for students, (Pintrich, 2004) and provide an educator an opportunity to facilitate clinical growth.

Multiple Perspectives

Collecting multiple perspectives, including ratings from self-assessments and external observations of performance has been conducted with varying degrees of agreement (Davis et al., 2006; Jensen, 2013; Lai & Teng, 2011; Lau, Dolovich, & Austin, 2007). Research suggests people lack insight into their own abilities, which can lead to a mismatch between subjective and objective performance measures (Davis et al., 2006; Donaldson & Grant-Vallone, 2002; Lai & Teng, 2011; Zell & Krizan, 2014). This can lead to the thought that there is little value for self-assessment. Although objective measures of performance are preferred, the inclusion of self-assessments provides an opportunity to add a second source of data and increase awareness of self-performance.

Each educator and researcher hold a perspective that can influence observation (Courneya, Pratt, & Collins, 2008), therefore it is essential to include multiple measures such as objective assessment in conjunction with self-report measures (Donaldson & Grant-Vallone, 2002; Lai & Teng, 2011) and recognize that the use of multi-method assessments help mitigate threats to validity (Donaldson & Grant-Vallone, 2002). A single method of assessment provides a one-dimensional view of a multifaceted concept. In the current research study, the use of multiple perspectives included both educator assessment and

student self-assessment, utilizing a pedagogical approach that provided students with an opportunity to reflect upon a clinical experience to determine skills that were in need of development and identify areas of clinical performance that were secure. A combination of subjective and objective assessment offered multiple measures of clinical competence.

Purpose of the Study

This study had two purposes: (a) examine the relationship between student motivation and clinical growth in BSN nursing students in the traditional clinical learning environment, and (b) measure the concept of clinical growth. The aims of this study were to: (1) determine if components of the student's motivation contributed to their clinical growth in the traditional clinical learning environment using multiple regression between the MSLQ (Appendix B) and the CCEI (Appendix A) scores; (2) measure nursing students' clinical growth using the CCEI (Appendix A), a valid and reliable instrument, within a consistent process; and (3) compare nursing students' self-assessment of their clinical growth with the educator's assessment using the CCEI (Appendix A), a valid and reliable instrument, within a consistent process.

Significance of the Study

Findings from this study will contribute valuable knowledge on use of the CCEI to measure clinical competency and clinical growth and its association with components of student motivation as factors influencing clinical growth in the traditional clinical learning environment, which is paramount to advance the science of nursing education. With additional empirical evidence about the CCEI, there is an opportunity to develop a consistent process that can minimize subjectivity while assessing BSN students in the traditional clinical learning environment. Although there is an identified need for

instruments that objectively evaluate students in the traditional clinical learning environment, it is also necessary to obtain student self-assessment to facilitate self-directed learning using a reliable and valid instrument with a fair assessment process. Findings from this study add to this body of knowledge. Perspectives from both educators and nursing students were collected using the CCEI. The multiple data sources support the findings of the concept of clinical growth and provide findings that can guide future research to design and test interventions that facilitate learning in the traditional clinical learning environment.

Furthermore, student motivation has not been well studied in the traditional clinical setting. Therefore this study contributes knowledge regarding motivation as it relates to clinical growth by investigating whether the value and the expectancy components of motivation contribute to the nursing student's ability to grow in the traditional clinical learning environment. Based on findings from this study, future interventions can be created to improve clinical growth through the promotion of self-regulatory strategies selected by students, enhancing motivation in either the value or expectancy components of motivation.

<div align="center">**Definition of Terms**</div>

To promote clarity throughout the study, the following terms were defined: *clinical growth*, *clinical competence*, *motivation*, *traditional clinical learning environment*, and *fair assessment*. Although clinical growth and clinical competency are both used in the literature, for this study, a distinction was made between these two terms. Furthermore, the terms traditional clinical learning environment, motivation, and fair assessment were included to offer clarity as these concepts were used in the study.

Clinical Growth

Clinical growth was defined as "a holistic representation of progress in the following capacities: learner's ability to achieve a higher level of thinking, socialization to the profession with moral considerations, cognitive, psychomotor, and affective skill development, self-reflection, self-investment, interpersonal communication, and the ability to link theory to practice" (Barkimer, 2016, p E33). The Model of Clinical Growth also includes antecedents, such as the intrinsic characteristic of motivation and consequences such as competency. For further information on the Model of Clinical Growth and the relationships among antecedents, attributes, and consequences, a visual representation is available in Chapter II, Figures 2 and 3.

Clinical Competence

Clinical competence is a nebulous term that is difficult to define and operationalize (Lejonqvist, Eriksson, & Meretoja, 2016). For the purpose of this research study, clinical competence was defined as "the ability of the nursing student to observe and gather information, recognize deviations from expected patterns, prioritize data, make sense of data, maintain a professional response demeanor, provide clear communication, execute effective interventions, perform nursing skills correctly, evaluate nursing interventions, and self-reflect for performance improvement within a culture of safety" (Hayden et al., 2014b, p.S42).

Motivation

Motivation is an intrinsic student characteristic required for clinical growth to occur, resulting in the potential outcome of clinical competency (Barkimer, 2016). Motivation was conceptualized with two key components an "*expectancy component*, the

belief that one can be successful in completing a task/skill and a *value component*, the reason for participating in the task" (Pintrich & De Groot, 1990, p. 33). The expectancy component consists of two subcomponents that include beliefs related to control of learning and self-efficacy for learning and performance. The value component includes three subcomponents; intrinsic goal orientation, extrinsic goal orientation, and the task value (Pintrich et al., 1991).

Traditional Clinical Learning Environment

The term traditional clinical learning environment was defined as a location where students are assigned to a particular institution or clinical unit to provide patient care away from the school of nursing campus. According to Neal (2016), "academic faculty serve as the primary teacher and supervisor to students learning in the traditional clinical model. The clinical nurse, student, and faculty share accountability for providing patient care" (p. 13).

Fair Assessment

The term fair assessment for the current study was defined as consistent and clear expectations that are communicated to both educators and students. Providing definitions of the terms used during the study promotes clarity throughout the study, including the research questions. The term assessment was selected for use in this study instead of evaluation to be consistent with a definition that promotes learning and identifies areas for improvement, consistent with the concept of clinical growth. The following research questions were addressed in the current study.

Research Questions

1. Is there a relationship between the expectancy component of student motivation and clinical growth as assessed by educator?

2. Is there a relationship between the expectancy component of student motivation and clinical growth as assessed by student?

3. Is there a relationship between the value component of student motivation and clinical growth as assessed by educator?

4. Is there a relationship between the value component of student motivation and clinical growth as assessed by student?

5. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the $\geq$ 80 hour clinical course to the end when assessed by educator?

6. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the $\geq$ 80 hour clinical course to the end when students assess themselves?

7. Is there a relationship between educator and student clinical growth scores from the beginning to the end of a clinical course with senior level students enrolled in a traditional eight-semester BSN program?

Organization of Dissertation

This dissertation is organized into five chapters. Chapter I includes the background of the study, statement of the problem, purpose of the study, significance of the study, definition of terms, and research questions. Chapter II presents the conceptual and theoretical framework for the current study followed by the philosophical

underpinnings and a review of the literature including; clinical education, evaluation in the clinical learning environment, benefit of gathering multiple perspectives, motivation as it relates to the MSLQ, and assessment, communication, clinical judgment, and patient safety as they relate to the CCEI. Chapter II concludes with the assumptions of the current study, a review of the research questions and hypotheses, and a summary of gaps in the literature and how the study addressed the gaps. Chapter III presents the methodology of the study including, relevant pilot study findings, selection of potential research participants and the setting, training session, instrumentation, data collection, data analysis, protection of human subjects, and a summary.

Chapter IV traditionally presents the study findings; however, a manuscript option was selected, therefore the findings have been incorporated into a manuscript as prepared for submission including the results of the completed study. The manuscript option also includes the content typically included in Chapter V; a summary of the completed study, discussion of the findings, implications, clinical significance, the implications of the research for nursing education, limitations of the study, recommendations for further research, and finally, the conclusions. The manuscript submission follows Chapter IV/V. Following Chapter V, an addendum addresses the significance of the findings for the following topics: intrinsic goal orientation, task value, extrinsic goal orientation, control of learning beliefs, self-efficacy for learning, and the Model of Clinical Growth as it relates to the study findings.

Summary

This chapter introduced the research study, provided a statement of the problem, presented the purposes and aims, identified the significance of the study as it relates to the profession of nursing and nursing education, defined terms to offer clarity, and

presented the research questions. There is a need for a nursing education research study that uses a consistent process for assessment of nursing students in the traditional clinical learning environment with a valid and reliable instrument. Clinical educator and student perspectives were collected to provide multiple data sources that promote understanding of the multifaceted concepts of clinical growth and competence. Finally, the current research study investigated the relationship between student motivation and clinical growth in the traditional clinical learning environment.

CHAPTER II REVIEW OF THE LITERATURE

This chapter provides a review of the literature about motivation, clinical education, evaluation, and multiple perspectives. This study was guided by conceptual and theoretical frameworks that identify concepts and relationships that help explain the process of learning and support the process of clinical growth and clinical competency. Bloom's Taxonomy of Learning (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956) provided the conceptual underpinnings that guided this study while the theoretical Model of Clinical Growth (Barkimer, 2016) provided a framework for understanding relationships of antecedents and attributes for clinical growth. Discussed are the instruments selected to measure empirical data relevant to the study, postpositivism as the philosophical underpinning, as well as a review of the literature for clinical education, evaluation in the clinical learning environment, and use of multiple perspectives for student assessment. Statements of assumptions, research questions and hypotheses for the current research study are provided. Finally, the chapter concludes with a summary of the gaps in the literature as revealed from this review.

Conceptual Underpinnings: Bloom's Taxonomy of Learning

Bloom's Taxonomy of Learning is a framework that was developed by a committee of college and university examiners who identified three domains of learning; cognitive, affective, and psychomotor (Bloom et al., 1956). Bloom's Taxonomy of Learning provides the conceptual framework that supports student learning in all three learning domains simultaneously in order to promote clinical growth and competency. The three learning domains; cognitive, affective, and psychomotor, received individual attention and were developed to assist educators in the process of establishing clear

expectations for learners. This taxonomy has provided a standardized method for educators to use in the evaluation and measurement of learning (Anderson et al., 2001; Novotny & Giffin, 2006). Bloom's Taxonomy of Learning (1956) provided conceptual direction for the study, incorporating all three learning domains; cognitive, affective, and psychomotor during the process of clinical growth.

Learning Domains

Cognitive domain: original taxonomy. Bloom's Taxonomy of Educational Objectives was originally created with the intent to achieve the following outcomes; promote common language regarding learning goals, facilitate congruence among learning activities, objectives, and assessments, provide meaning for broad educational goals, and create a wide range of educational possibilities for any educational course or curriculum (Bloom et al., 1956; Krathwohl, 2002). The original taxonomy was structured with sequential categories that progressively escalate the required cognitive processes of the individual including; knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom et al., 1956). The strict hierarchical staging of the taxonomy progressed from both simple to complex and concrete to abstract thinking. Each category includes subcategories that contain even more specific criteria, with the exception of the application category (Bloom et al., 1956; Krathwohl, 2002). Although Bloom's original taxonomy of the cognitive domain is widely known and utilized by educators, new knowledge needs to be incorporated to facilitate best educational practices and to create a

framework that aligned curriculum, instruction, and assessment, therefore the original cognitive domain was revised (Anderson et al., 2001).

Cognitive domain: revised taxonomy. In 2001, a group consisting of both new and original members from Bloom's Taxonomy of Learning met to revise the cognitive domain with the aim to incorporate new knowledge that reflects current evidence based practice (Anderson et al., 2001). Over the past fifty years, new knowledge arose relating to student development and various pedagogies as well as changes in educators' teaching and assessment strategies, suggesting the need for a revision (Anderson et al., 2001). Major changes to the original document were made that shifted the focus to a broad framework that aligned curriculum, instruction, and assessment (Anderson et al., 2001).

The original taxonomy included the category *knowledge*, which was unidimensional since it included both noun (the subject matter) and verb (action such as recognize or recall). The revised taxonomy separated the noun into the knowledge dimension and the verb into the cognitive process dimension, shifting from one dimension to two dimensions (Anderson et al., 2001; Krathwohl, 2002). The knowledge dimension was changed from three to four categories, with the addition of metacognitive knowledge. Metacognitive knowledge includes students' awareness and knowledge about their own cognition and the importance of their role in this process (Anderson et al., 2001; Krathwohl, 2002). This self-reflective strategy of students thinking about their thinking is essential to the learning process. Students become aware of self-knowledge and change the ways in which they think and respond (Anderson et al., 2001; Krathwohl, 2002).

The original six categories in the cognitive dimension were altered, renaming three categories from the original taxonomy and switching the order of two categories. The original category labeled *knowledge* was renamed *remember* because of the shift to two dimensions and the need to include a verb form for the category (Anderson et al., 2001; Krathwohl, 2002). The second category that was originally labeled *comprehension* was changed to *understand*, reflecting a more commonly used term (Anderson et al., 2001; Krathwohl, 2002). The three categories *application*, *analysis,* and *evaluation* were changed to reflect their verb forms, *apply*, *analyze*, and *evaluate* (Anderson et al., 2001; Krathwohl, 2002). Finally, in the revision, the categories of *synthesis* and *evaluation* changed places in their order and *synthesis* was changed to the category labeled *create* (Anderson et al., 2001; Krathwohl, 2002). Although there is still a hieratical structure, the creators of the revised taxonomy acknowledged that the categories have the possibility to overlap, promoting a more user-friendly framework. The final significant change includes the combination of the knowledge and cognitive process dimensions to create the taxonomy table, which is useful tool for educators (Anderson et al., 2001; Krathwohl, 2002). Figure 1 illustrates the changes from the original taxonomy in 1956 to the revised taxonomy in 2001 including the changes from noun to verb and the order of the categories.
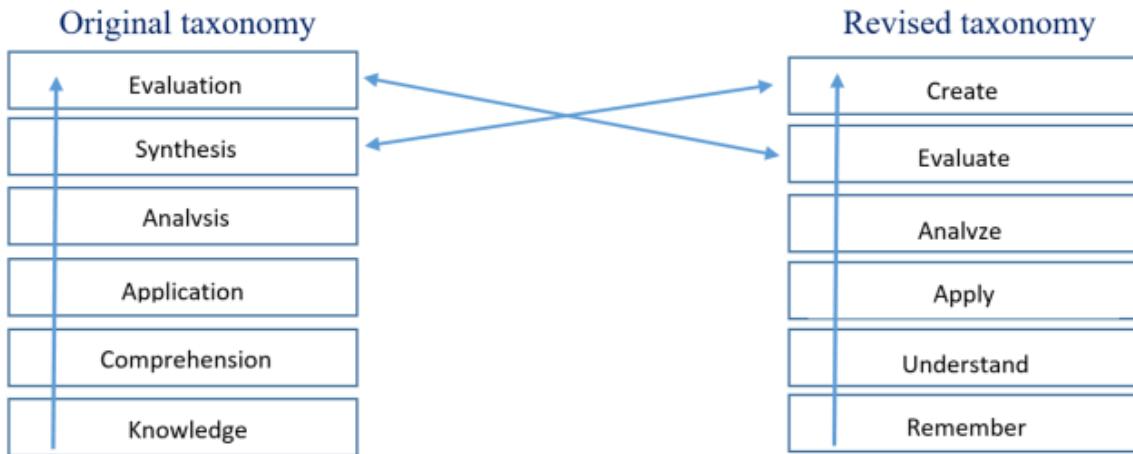
Figure 1: Bloom's taxonomy: Original and revised versions

Assessing learning in the cognitive domain is crucial for educators. The cognitive domain includes some of the most foundational skills in the nursing profession, learning how to think like a nurse (Tanner, 2006b). Higher-level thinking skills that lead to clinical judgment need to be developed in nursing students through therapeutic communication and while reflecting and interpreting patient concerns (Benner et al., 2010). In addition to these cognitive processes, the revised taxonomy of the cognitive domain included the significant addition of metacognitive knowledge, which can be facilitated through self-reflection. Promoting self-reflection, allows educators to help students become more aware of their thinking and then act on that awareness (Anderson et al., 2001). The cognitive domain also lays the foundation for educators to help students make connections between theory and practice. When educators integrate classroom knowledge and clinical experience, students have an opportunity to experience a deeper understanding to make astute clinical judgments (Benner et al., 2010).

Addressing only one learning domain is problematic, considering learning occurs in many domains at the same time. After the creation of the original taxonomy that focused on the cognitive domain (Bloom et al., 1956), attention was given to developing the affective domain (Krathwohl, Bloom, & Masia, 1964). The psychomotor domain was never developed by Bloom and the original group who created the cognitive and affective domains, therefore other researchers have spent time creating models for use in this learning domain (Harrow, 1972; Simpson, 1972).

Affective domain. After the creation of the cognitive domain, Bloom and his colleagues created Bloom's Taxonomy, the affective domain (Krathwohl et al., 1964). Instead of focusing on cognition, this domain addresses how learners handle emotions, values, and attitudes, which are a part of the learning process. This taxonomy was created similarly to the cognitive domain, ranging from simple to complex categories in hierarchical staging. The five categories included; receiving, responding, valuing, organization, and characterization (Krathwohl et al., 1964).

There are many opportunities for educators to assess learning in the affective domain while in the traditional clinical learning environment. To promote the attribute of interpersonal communication, an educator can facilitate learning by utilizing teaching strategies that promote discussion, consideration, and reflection to help a learner achieve various levels of this learning domain. The American Association of Colleges of Nursing (2008) identified five core values that guide nurses in ethical behavior when providing care for patients; altruism, autonomy, human dignity, integrity, and social justice. These core values are essential for educators to demonstrate in the traditional clinical setting as well as to promote within each student providing patient care to support socialization.

Students often need assistance in examining their performance when considering these values (Billings & Halstead, 2016), illustrating the need for self-investment which can be facilitated through the process of self-assessment. Although Bloom's Taxonomy is notorious for the cognitive domain, the affective domain is essential for assessment of learning in nursing education.

Psychomotor domain. Although the psychomotor domain was recognized as essential to the learner, Bloom and his colleagues never developed this domain. Instead, other researchers worked on creating models for use in assessing this learning domain (Harrow, 1972; Simpson, 1972). Harrow (1972) created the psychomotor domain that focused on learners' physical functions, actions, and movements using fine and gross motor skills. Harrow's taxonomy included the following terms; reflex movements, fundamental movements, perceptual abilities, physical abilities, skilled movements, and nondiscursive communication (Harrow, 1972).

In nursing education, it is apparent that educators must support clinical growth and development in the psychomotor domain. The psychomotor learning domain engages nursing students in performing hands on tasks for patients. For example, perceptual abilities include combining senses such as visual and auditory awareness to perceive information and then react (Harrow, 1972), an important skill for students to learn to promote safe patient care. The psychomotor domain also focuses on skilled movements (Harrow, 1972), which includes developing techniques such as placing an intravenous catheter or performing a peripheral venipuncture. These movements and skills require practice in order to be prepared to provide care for patients. Student nurses need to engage in all three learning domains to facilitate growth and development.

Figure 2 depicts the connections among the conceptual framework, theoretical model, and empirical data.
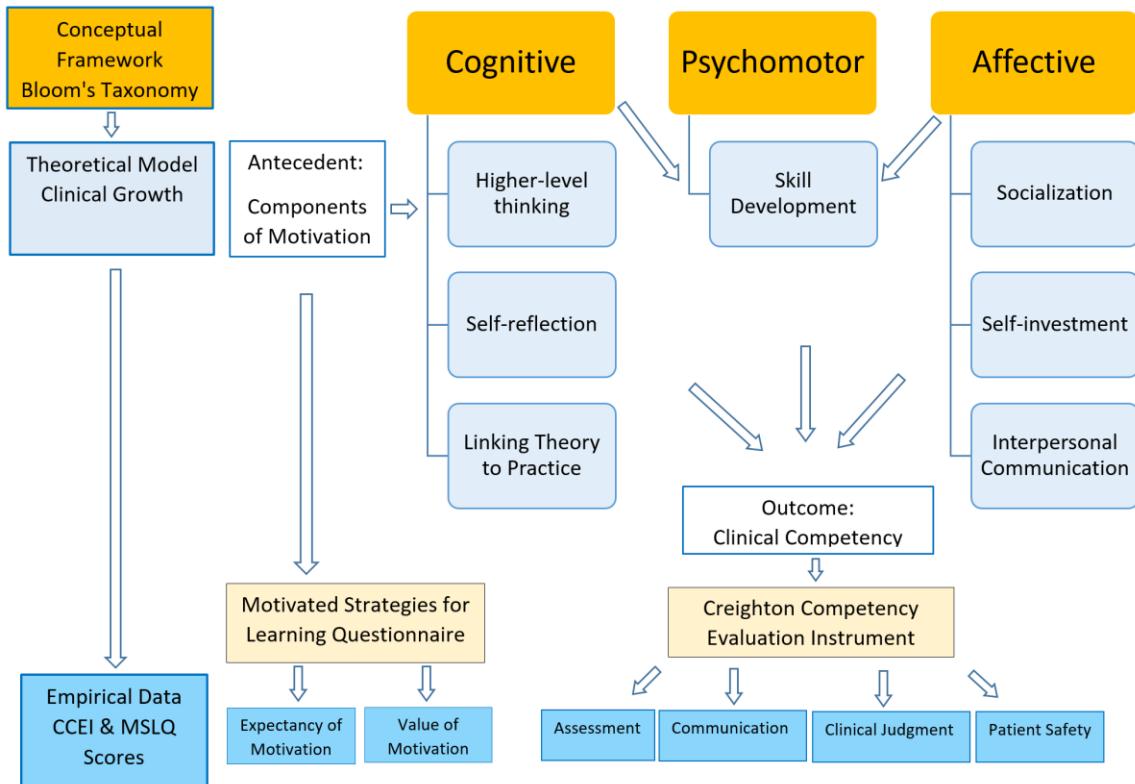
Figure 2: Conceptual, theoretical, and empirical data

Theoretical Framework: Clinical Growth

The Model of Clinical Growth (Barkimer, 2016) was selected to provide a theoretical framework for understanding relationships among antecedents and attributes of clinical growth that relate to the outcome of clinical competency. A concept analysis was conducted using Rodgers (2000) evolutionary approach, producing antecedents,

attributes, and outcomes of clinical growth (Barkimer, 2016). Figure 3 provides a

depiction of the Model of Clinical Growth, including antecedents, attributes, and

consequences.
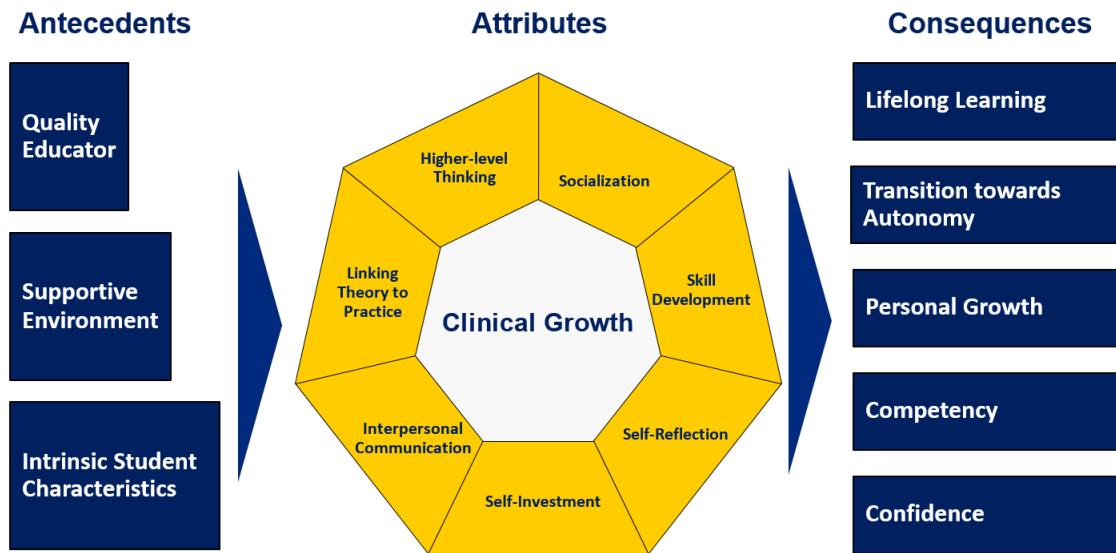
Figure 3: Model of Clinical Growth (Barkimer, 2016)

Clinical Growth and the Creighton Competency Evaluation Instrument

Clinical growth includes progress of the student in the following areas; "higher-

level thinking, socialization to the profession with moral considerations, cognitive,

psychomotor, and affective skill development, self-reflection, self-investment,

interpersonal communication, and the ability to link theory to practice" (Barkimer, 2016,

p. E33). Discussion of this section of the literature review includes a description of the

attributes of clinical growth as they relate to the Creighton Competency Evaluation

Instrument (CCEI), depicting the connection between the concept and the instrument.

The CCEI is a 23 item evaluation instrument that assesses learning in four areas;

assessment, communication, clinical judgment, and patient safety (Hayden, et al., 2014a).

Six of the seven attributes of clinical growth are embedded within the four subscales of

the CCEI. Self-investment is one attribute of clinical growth that is not embedded within

the CCEI; however, this attribute is addressed in the methodology of the study using self-

assessment.

       To illustrate the connection between the components of the CCEI and the concept

of clinical growth, multiple searches were performed from the disciplines of nursing,

medicine, education, and health science. Article retrieval was completed using the

following databases: CINAHL, ERIC, Psyc INFO, Medline, Web of Science, and

Cochrane Library. The following key terms were searched in various combinations:

students, nursing, self-reflection, self-investment, theory and practice, socialization, *skill

development, clinical judgment, communication, patient safety,* and *assessment*.

Understanding the seven attributes of clinical growth (Figure 3) is imperative for the

selection and use of the CCEI (Appendix A). Permission was secured to display the

Model of Clinical Growth (Appendix C) and to use the CCEI (Appendix D).

       Assessment. The assessment subscale of the CCEI relates to skill development,

an attribute of clinical growth (Barkimer, 2016). The first subscale of the CCEI,

assessment, includes: obtaining pertinent data, performing follow-up assessments, and

assessing the patient environment (Parsons et al., 2012; Todd, Manz, Hawkins, Parsons,

& Hercinger, 2008). Skill development, an attribute of clinical growth encompasses all

three learning domains and allows students to work within the cognitive, affective, and

psychomotor domains simultaneously (Barkimer, 2016). Nursing students need to not only understand how to complete the psychomotor skill of performing a follow-up assessment, but also the cognitive skill of why it would be important in each situation, and furthermore, the affective ability of how to communicate with patients to obtain the necessary follow-up information. The assessment subscale includes the attribute of skill development from the Model of Clinical Growth, making the connection between the CCEI and the concept of clinical growth.

Communication. The communication subscale from the CCEI includes the attributes, interpersonal communication and socialization from the concept of clinical growth. In the CCEI, this subscale includes effective communication with intra/interpersonal team, communicating with patient and significant other, documentation, and responding to abnormal findings (Parsons et al., 2012; Todd et al., 2008). Similarly, the concept of clinical growth addresses interpersonal communication, which involves communication from the student to the client/family, nursing staff/other professionals, and the educator/nurse teacher to provide clear expectations and optimal care (Barkimer, 2016). Other studies stress the importance of interpersonal communication and the need for specific skill training regardless of education levels in nursing school (Searl et al., 2014; Xie, Ding, Wang, & Liu, 2013).

The communication subscale on the CCEI includes the aspect of promoting professionalism (Parsons et al., 2012; Todd et al., 2008). The concept of clinical growth addresses socialization, including professionalism, evidenced by the ability for nursing students to understand and learn the culture of the profession (Barkimer, 2016). Through socialization, relationships are strengthened while students become more involved on the

unit with the care of patients and gain a better understanding of professionalism (Spence, Vallant, Roud, & Aspinall, 2012). Educators from schools of nursing were found to play a pivotal role in the socialization process and should implement specific strategies to facilitate this process (Benson, Martin, Ploeg, & Wessel, 2012; Foli, Karagory, Gibson, & Kirkpatrick, 2013). Clearly, the subscale of communication on the CCEI addresses interpersonal communication and socialization (Parsons et al., 2012; Todd et al., 2008), two attributes of the concept clinical growth, however, there is no mention of moral considerations in the CCEI, which is part of the concept of clinical growth (Barkimer, 2016).

      Clinical judgment. Clinical judgment is one subscale in the CCEI that includes three of the critical attributes of the concept clinical growth: higher-level thinking, connecting theory to practice, and self-reflection (Barkimer, 2016). Clinical judgment in the CCEI includes the accurate interpretation of assessment findings, labs, subjective and objective data, and appropriate prioritization and delegation (Parsons et al., 2012; Todd et al., 2008), which directly relates to the attribute of higher-level thinking from the concept of clinical growth. Critical thinking disposition, clinical reasoning, and clinical judgment are important considerations for the clinical setting considering the high unpredictability of the learning environment (Glynn, 2012; Lasater, 2011; Mann, 2012). It is important for a student to have the ability to consider alternatives, weigh evidence and choose the most appropriate course of action for that situation (Tanner, 2006b).

      The subscale of clinical judgment on the CCEI also includes performing appropriate evidence based interventions, providing rationales, and evaluating the interventions and outcomes (Parsons et al., 2012; Todd et al., 2008). These three areas

relate to the attribute of clinical growth; connecting theory to practice (Barkimer, 2016).

Connecting theory to practice was incorporated into the literature and necessary to make

knowledge gained in classes meaningful in practice (Fotheringham, Lamont, Macbride,

& MacKenzie, 2015; Price, Tschannen, & Caylor, 2013).

In the subscale of clinical judgment, there is one item that addresses reflecting on

clinical experience (Parsons et al., 2012; Todd et al., 2008). This item of the CCEI,

connects to the attribute of self-reflection from clinical growth (Barkimer, 2016). The

initiation of the reflection process helps students explore meaning and significance of

their experience, challenging their current understanding (Adamson & Dewar, 2015;

Aronson et al., 2011; O'Reilly & Milner, 2014).

Patient safety. Patient safety is the fourth subscale within the CCEI and is

connected to skill development, one of the seven attributes of clinical growth (Barkimer,

2016). The patient safety subscale on the CCEI includes skills such as using patient

identifiers, using standard precautions, administering medications safely, managing

technology effectively, performing procedures correctly, and considering hazards and

errors (Parsons et al., 2012; Todd et al., 2008). Skill development is necessary for

students in the clinical setting to enhance patient safety and to influence self-perception

of competence (Hinck & Bergmann, 2013; Öztürk, Çalişkan, Baykara, Karadağ, &

Karabulut, 2015).

Nursing students need to develop the skills that are necessary to create a culture of

safety and to promote patient safety. National patient safety goals prioritize several of

the items embedded within the patient safety subscale of the CCEI; identify patients

correctly, improve staff communication, use medicines safely, and prevent infection

(Joint Commission, 2016, 2017, 2018). The attribute of skill development in clinical

growth allows a learner to engage in all three learning domains simultaneously, creating a

more comprehensive lens to address the goal of patient safety. It is not enough for

nursing students to learn how to perform a psychomotor skill that will promote patient

safety, but instead they must learn how to consider possibilities based on the context of

the scenario and select the appropriate actions (Tanner, 2006b). The CCEI subscale of

patient safety is connected to the attribute of skill development from the Model of

Clinical Growth.

Self-investment is one attribute of clinical growth that is not embedded in the

CCEI. Self-investment involves the student actively engaging in the learning process or

in the evaluation process (Barkimer, 2016). This can also include self-awareness, which

is essential to prepare a student for entry-level practice (Thomas, Baker, Pope, Latham, &

Mededji, 2010). Educators have an important role and a responsibility in facilitating

student engagement and self-investment (Bernard, 2015). Although self-investment is

not embedded in the CCEI, the attribute was incorporated into the methodology of the

study as students used the CCEI to assess personal performance in the traditional clinical

learning environment. There is a clear connection between the concept of clinical growth

and the CCEI, therefore this instrument was selected for use to address the research

questions. Table 1 illustrates the relationships between the CCEI and the Model of

Clinical Growth.

Table 1: Relationships between CCEI and Model of Clinical Growth

Creighton Competency Evaluation Instrument Subscales

	Assessment	Communication	Clinical Judgment	Patient Safety
Skill Development	X			X
Interpersonal Communication		X		
Socialization		X		
Higher-level Thinking			X	
Connecting Theory to Practice			X	
Self-reflection			X	
Self-investment*				

Model of Clinical Growth Attributes

*Self-investment which includes actively engaging in the learning or evaluation process (Barkimer, 2016) is not embedded within the CCEI, however the attribute was incorporated through the methodology of the study.

Linkages: Conceptual, Theoretical, and Empirical Data

The linkages among the conceptual framework of Bloom's Taxonomy of Learning, the theoretical Model of Clinical Growth, and the empirical data are displayed in Figure 2. This study is grounded in Bloom's Taxonomy of Learning, including the three domains of learning; cognitive, affective, and psychomotor (Bloom, et al., 1956). The attributes from the Model of Clinical Growth relate to the three learning domains in Bloom's Taxonomy of Learning framework. The Model of Clinical Growth includes attributes relating to the cognitive domain: higher-level thinking, self-reflection, and linking theory to practice; attributes relating to the affective domain: socialization, self-investment, and interpersonal communication; and one attribute relating to the

psychomotor domain, skill development, although it is necessary in all three learning domains.

Nursing students engage in all three learning domains simultaneously while working in the clinical learning environment, therefore, it is essential that clinical assessment address each domain. According to the Core Competencies of Nurse Educators, there is an expectation for educators to facilitate learning and the achievement of previously established cognitive, affective, and psychomotor outcomes (NLN, 2016b). The use of Bloom's Taxonomy of Learning as a framework for nursing education is well documented in the literature (Bourbonnais et al., 2008; D'Souza, Karkada, Parahoo, & Venkatesaperumal, 2015; Victor-Chmil & Larew, 2013). Bloom's Taxonomy of Learning is a guiding conceptual framework for the theoretical Model of Clinical Growth, and together they provide a clinical educator or researcher the opportunity to determine significant research questions and examine relationships between aspects of the model such as the outcome of competency and the antecedent of motivation as an intrinsic student characteristic (Barkimer, 2016). Following this conceptual framework and theoretical model, clinical competency and clinical growth are operationalized using the CCEI (Appendix A) and the antecedent of motivation is operationalized using the Motivated Strategies for Learning Questionnaire (MSLQ) (Appendix B) to provide empirical data. Figure 2 illustrates the conceptual, theoretical, and empirical relationships for this study.

Motivation and the Motivated Strategies for Learning Questionnaire

The theoretical Model of Clinical Growth includes three antecedents: quality educator, supportive environment, and intrinsic student characteristics. According to the

concept analysis of clinical growth, intrinsic student characteristics include several

qualities, such as motivation, willingness, and various personal virtues (Barkimer, 2016).

The literature about motivation supports the research questions that examine the

relationship between components of motivation and clinical growth.

      Motivation. Studies about motivation revealed that students' academic

motivation increased when the perception of the clinical learning environment improved

(Aktaş & Karabulut, 2016; Radovan & Makovec, 2015). A study by Bos, Alinaghizadeh,

Saarikoski, and Kaila, (2015) supported these findings where motivation and student

satisfaction were highly influenced by the pedagogical atmosphere and the supervisory

relationship. Coaching is another strategy that has been used to tap into the students'

innate motivation to learn (Narayanasamy & Penney, 2014). Understanding aspects of

student motivation is useful in identifying nursing students at risk for failure in a course

(Elder et al., 2015). All of these studies support the importance of a supportive learning

environment and the role of the educator in enhancing student motivation as antecedents

required for clinical growth to occur (Aktaş & Karabulut, 2016; Bos et al., 2015;

Narayanasamy & Penney, 2014).

      Understanding the concept of clinical growth is necessary to guide researchers

when examining the potential relationships among the antecedents, attributes, and

outcomes as in the current research study. For the purpose of this study, student

motivation has been conceptualized with two areas: an expectancy component and a

value component (Pintrich & De Groot, 1990). Pintrich and De Groot (1990) also

included an affective component, however, this component will not be included for

measurement since the current study focused on clinical growth in the traditional clinical

setting and the affective component from the MSLQ specifically addresses test anxiety.

    Expectancy component. The expectancy component of motivation addresses

students' beliefs of their ability to perform a skill and includes two subcomponents:

control beliefs and self-efficacy (Pintrich, Smith, Garcia, & McKeachie, 1991; Pintrich &

De Groot, 1990). The first, is the expectancy subcomponent of control beliefs which are

the students' beliefs that making an effort to learn will result in a positive outcome. The

second expectancy subcomponent of motivation is self-efficacy for learning and

performance. Self-efficacy refers to a student's confidence in one's ability to perform the

skill (Pintrich et al., 1991). Although the expectancy component of motivation is

important to consider for clinical growth, it is also necessary to understand the value

component of student motivation.

    Value component. The value component of motivation includes three

subcomponents: intrinsic goal orientation, extrinsic goal orientation, and task value

(Pintrich et al., 1991). Intrinsic goal orientation involves the students' reasons for

engaging in learning. Some students may view learning as a means to an end, while

others may view learning as the task itself. Students who display an intrinsic goal

orientation, consider learning as the task itself and may participate in learning to be

challenged or for mastery (Pintrich et al., 1991). A student may display the qualities of

extrinsic goal orientation if the student engages in learning because it is a means to an

end. For example, a student may participate in learning because of a grade, status, or a

reward (Pintrich et al., 1991). The third value subcomponent of motivation is the task

value. Task value refers to how the student perceives the importance of learning. A

student might display higher task value traits if the information to be learned is perceived as necessary and useful (Pintrich et al., 1991). Understanding the three value subcomponents of motivation allows an educator to gain insight into students' beliefs and perceptions of the importance of learning.

Motivated Strategies for Learning Questionnaire. Motivation is a necessary component for academic success. In this study, like others, the expectancy and value components of motivation were measured using the Motivated Strategies for Learning Questionnaire (MSLQ) to provide empirical data for the antecedent of motivation, an intrinsic student characteristic necessary for clinical growth. The MSLQ is a student self-report measure that assesses motivational orientation and learning strategies in a college course. The MSLQ is broken into two sections and 15 scales intentionally constructed to be used independently, modularly, or all together (Pintrich et al., 1991). For the purpose of this study, the motivation components of value and expectancy were assessed modularly, as two independent variables. The MSLQ is a well-developed instrument that has been used in a variety of settings, however there is a limited number of studies that include the clinical learning environment (Carter, Creedy, & Sidebotham, 2018; Cho, Marjadi, Langendyk, & Hu, 2017; Elder et al., 2015; Pelaccia et al., 2009). Chapter III includes a discussion of the Motivated Strategies for Learning Questionnaire and its use in previous research studies and the reliability and validity of the instrument.

<div align="center">

Philosophical Underpinnings: Postpositivism

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The prior sections of this chapter discussed the conceptual underpinning and the theoretical model for the current research study. Both of these aspects are essential to

ensure conceptual clarity, however, it is also imperative to understand the philosophical underpinnings of this study.

The postpositivism paradigm was selected to support the current research study based on the ontology, epistemology, and methodology. This paradigm evolved from the positivism paradigm that began with the search for truth, dating back to philosophers Rene Descartes (1641), who focused on reason, and the reality of things, and John Locke (1690), who believed that knowledge originates from experience. Although both philosophers differ in beliefs on the foundation of knowledge, it is apparent that both experience and rationality are involved in knowledge construction. Descartes and Locke were pivotal to the development of empiricism, providing support for the epistemological foundation for positivism (Phillips & Burbules, 2000). Auguste Comte, nineteenth-century philosopher and founder of positivism, accepted the principles of empiricism and supported the "positive" method of scientific inquiry arriving at knowledge. This method focuses on observations and strict reasoning about observed phenomena (Comte, 1830). This pursuit of knowledge supports the ontological belief that reality exists and needs to be observed and measured, free from the observer context (Guba, 1990). The positivist epistemological belief eliminates values and bias from entering the research, supporting methodological approaches such as experimental studies under highly controlled conditions (Guba, 1990). This positivist paradigm is unrealistic for many research studies since observers cannot be free from experience, values, and judgment (Guba, 1990). Although there are many challenges when adhering to the positivist paradigm, the influence is seen in nursing education research through the acceptance of operational

definitions of concepts that are investigated through measurement, such as clinical competence and clinical growth.

In response to criticism of the positivist paradigm, postpositivism emerged as an approach to knowledge obtainment, rejecting the principle of knowledge rooted in absolute secure foundations (Phillips & Burbules, 2000). The postpositivism paradigm continued to value control and prediction; however, there is acknowledgment of the influence from the observer or researcher. The ontology of postpositivism supports the notion that reality exists, however, it will never be fully understood by imperfect humans and is always subject to reconsideration (Guba, 1990; Phillips & Burbules, 2000). The epistemology of postpositivism supports objectivity as a goal but recognizes that it is only approximated. Postpositivism methodology includes modified experimental or manipulative research, focusing on multiplism. The emphasis on multiplism supports several sources of data collection, a form of triangulation. Considering the postpositivist belief that objectivity can never fully be attained, collecting multiple sources of data makes it less likely to yield distorted findings. This paradigm can be criticized for the inability to eliminate objectivity, since there is always someone's reality influencing the findings. Postpositivism provided the philosophical underpinnings that supported assessment of clinical growth in this study that used multiple sources of data and multiple realities from the trained clinical educator, researcher, and the student (Guba, 1990). The postpositivist paradigm provided the philosophical underpinning for the current research study by including a naturalistic setting and quantifying the concept of clinical competence and clinical growth while measuring multiple realities.

Clinical Education, Evaluation, and Multiple Perspectives

A comprehensive literature review and critical analysis was undertaken to provide support for the study including: clinical education, evaluation in the clinical learning environment, and use of multiple perspectives. Multiple searches were performed from the disciplines of nursing, medicine, education, and health science. Article retrieval was completed from the years 2011 to 2018 using the following databases: CINAHL, ERIC, Psyc INFO, Medline, Web of Science, and Cochrane Library. The following key terms were searched in various combinations: *students, nursing, measurement, learning environment, instruments, clinical competency, competency assessment, evaluation, clinical education and multiple perspectives.*

Articles were retained for further analysis if they met the following criteria; (1) directly related to pertinent content area; (2) discussed instrument development or evaluation in the clinical learning environment; (3) discussed the overall clinical learning environment; (4) included use of collecting multiple perspectives; and (5) articles published in the English language. Ancestral searching was utilized when a seminal article was identified. Articles were excluded if they did not meet the inclusion criteria or significantly add to the development of the literature review on this topic.

Incidental Findings

Themes and incidental findings emerge from the literature. These incidental findings included information regarding the geographical location, multiple disciplines, and common frameworks of prior research into these concepts. The geographical location of articles in the review of the literature included several countries outside of the United States, suggesting national and international concern for clinical education and

evaluation in the clinical learning environment (Anderson, Moxham, & Broadbent, 2016; Arkan, Ordin, & Yılmaz, 2018; Hsu & Hsieh, 2013; Kol & İnce, 2018; Ličen & Plazar, 2015; Löfmark & Thorell-Ekstrand, 2014). Various disciplines outside of nursing were included; education (Foubert, Nixon, Sisson, & Bares, 2005; Lounsbury, Huffstetler, Leong, & Gibson, 2005; Washer & Cochran, 2012) medicine (Aronson et al., 2011), and health sciences (Brown et al., 2011; Hinck & Bergmann, 2013; O'Reilly & Milner, 2014) indicating pervasive concern for evaluation and aspects of learning in the clinical environment. Throughout the literature, there were common frameworks selected by various disciplines that supported the conceptual underpinnings of the research questions. The most common frameworks included; Bloom's Taxonomy of Learning addressing three learning domains (Bourbonnais et al., 2008; D'Souza et al., 2015), Moo's Dimensions of Human Development (Chan, 2003; Papathanasiou, Tsaras, & Sarafis, 2014; Salamonson et al., 2015), and the *Essentials of Baccalaureate Education for Professional Practice* (Hayden et al., 2014a; Seurynck, Buch, Ferrari, & Murphy, 2014; Victor-Chmil & Larew, 2013). Although these incidental findings emerged, the preponderance of the literature reviewed relates to the following themes: clinical education, evaluation in the clinical learning environment, and use of multiple perspectives.

Clinical Education

Understanding nursing student motivation and evaluation in the clinical learning environment, requires an awareness of the current state of clinical education. Clinical education is well documented in the literature through descriptive studies (Arkan et al., 2018; Bisholt, Ohlsson, Engström, Johansson, & Gustafsson, 2014; D'Souza et al., 2015; Grobecker, 2016; Günay & Kılınç, 2018; Hooper et al., 2016; Kol & İnce, 2018; McNelis

et al., 2014; Salamonson et al., 2015), retrospective study (Johnston, Fox, & Coyer, 2018) instrument development (Bourbonnais et al., 2008; Chan, 2003; Salamonson et al., 2011), two integrative reviews (Collier, 2018; Hooven, 2014) and a concept analysis (Flott & Linden, 2016). From the review of the literature on clinical education, the following areas emerged: supportive environment, revision of the evaluation process, missed opportunities, and quality educator.

Supportive environment. The environment can impact student learning and affect feelings, behaviors, and growth (Hooven, 2014). Several instruments were used to measure the student perspective of the clinical learning environment. Hooven (2014) performed an integrative review and found five instruments that measured the clinical learning environment and six common themes emerged: staff-student relationships, nurse-manager involvement, students feeling 'included', atmosphere, nurse teacher involvement, and feedback. The five instruments that measured the clinical learning environment include; Clinical Learning Environment Inventory (CLEI) (Chan, 2001), Clinical Learning Environment (CLE) (Dunn & Hansford, 1997), Student Evaluation of Clinical Education Environment (SECEE) (Sand-Jecklin, 2000), Clinical Learning Environment, Supervision, and Nurse Teacher Instrument (CLES-T) (Saarikoski, Isoaho, Warne, & Leino-Kilpi, 2008), and Clinical Learning Environment Diagnostic Inventory (CLEDI) (Hosada, 2006). The CLEI or abbreviated CLEI-19 instrument was used in five studies (Brown et al., 2011; Chan, 2003; Papathanasiou et al., 2014; Salamonson et al., 2011, 2015), however, only the student perspective of the clinical learning environment was measured in three (Chan, 2003; Papathanasiou et al., 2014; Salamonson et al., 2015). The instruments captured the student perspective, however, the perspectives of staff

nurses and clinical teachers related to the clinical learning environment have not been studied.

Perception shapes attitudes and behaviors, so it is necessary to examine the results from subjective, self-assessment instruments. In three studies, differences were found between perceptions of the 'actual' and 'preferred' learning environments. Students preferred a more positive clinical environment than they perceived as being actually present (Brown et al., 2011; Chan, 2003; Papathanasiou et al., 2014). Students' value positive supervision, interpersonal relationships, interactions with clinical teachers and staff nurses as a positive learning environment, and feedback was essential for learning to occur (D'Souza et al., 2015) as well as a sense of belonging (Grobecker, 2016).

Revision of the evaluation process. Two descriptive studies (Hooper et al., 2016; McNelis et al., 2014) suggest strategies for optimizing students' learning in the clinical setting. Hooper and colleagues (2016), working with a task force from the Texas Board of Nursing, distributed a survey to 214 nursing programs in the state of Texas, asking educators, students, and clinical partners for information about the current environment for clinical education. One finding from the survey recommended revising the student evaluation process to optimize clinical instruction while focusing on patient safety (Hooper et al., 2016).

Hooper and colleagues (2016) made other recommendations based on findings educators who were dissatisfied with the clinical evaluation tools and requested instruments that were easier to use to provide effective evaluation of students' performance. Students expressed a mid-range rating of the clinical evaluation tools. Ideally, a clinical evaluation tool allows an educator to document student performance in

cognitive, affective, and psychomotor domains and provide feedback for student growth (Hooper et al., 2016). Their suggested recommendation included reviewing and revising clinical evaluation tools, ensuring they were usable and allowed for documentation of progress in meeting objectives. It was also determined that there was a need for a consistent process when using clinical evaluation tools ensuring that educators agreed on the criteria established for evaluation of student performance in the clinical setting (Hooper et al., 2016).

McNelis and colleagues (2014), in a multisite, multimethod, descriptive study examined students' interactions with educators during clinical learning experiences and produced similar findings as the previous study (Hooper et al., 2016). Their study discussed inadequate measures of student clinical progress and learning and a need for more objective clinical evaluation tools since many educators expressed concern for subjective aspects of evaluating clinical learning (McNelis et al., 2014). Both the Hooper and McNelis studies supported the need to optimize students learning through effective evaluation instruments which are easy to use, address all learning domains, provide an opportunity to document progress, and include established criteria to reduce subjectivity in the evaluation process.

Missed opportunities. The McNelis et al. (2014) study examined students' interactions with faculty members during clinical learning experiences. This study revealed that there are missed opportunities for learning between faculty members and students in the clinical learning environment (McNelis et al., 2014). There was also an identified need for deliberate faculty and student interactions regarding students' use of clinical reasoning in effectively prioritizing patient care (McNelis et al., 2014). The

findings of this study demonstrate the need for nursing education to shift away from task completion skills and instead consider new pedagogies that focus on clinical reasoning and clinical judgment to prepare students to provide safe and quality care. Since completion of the current study, one study did focus on the assessing clinical judgment during clinical practicum (Manetti, 2018). Furthermore, there is a need to develop and test new models and measures of clinical learning and to assess student competency and the ability to provide safe and effective patient care (McNelis et al., 2014).

Quality educator. A concept analysis of the clinical learning environment in nursing education revealed that one antecedent included a qualified educator in order for effective learning to occur (Flott & Linden, 2016). This is a similar finding to the Model of Clinical Growth which also included the antecedent of a quality educator for clinical growth to occur in the traditional clinical setting (Barkimer, 2016). Descriptions of a quality educator from the literature included; licensed registered nurse who is able to facilitate learning, supervise and evaluate students, and ensure patient safety (Arkan et al., 2018; Hosoda, 2006; Kalkbrenner & Brandt, 2012; Narayanasamy & Penney, 2014; Newton, Jolly, Ockerby, & Cross, 2010; Kari Sand-Jecklin, 2009) and an educator who is able to develop interpersonal relationships and who is approachable (Collier, 2018). Findings from the review of the literature strongly recommend having a qualified educator to support the growth of nursing students in the clinical learning environment (Anderson et al., 2016; Arkan et al., 2018; Kol & İnce, 2018) and a need for additional training for an educator to teach (Anderson et al., 2016; Arkan et al., 2018; Günay &

Kılınç, 2018). Qualified educators play a pivotal role in the facilitation and evaluation of student learning that affect patient safety.

Findings from the review of the literature of clinical education indicate that the student perspective of the learning environment is well documented (Arkan, 2018; Chan, 2003; Kol & İnce, 2018; Papathanasiou et al., 2014; Salamonson et al., 2015), however there is a need to consider educators' perception of the traditional clinical learning environment to identify some of the current factors that support or hinder clinical education (Hooven, 2014). The clinical environment shapes the learning that occurs for nursing students and many factors that need to be considered including relationships, the atmosphere, and feedback. Findings from this review of the literature also describe ways to optimize clinical instruction through the revision of the evaluation process. One way that learning can be optimized is to use a consistent process with clinical evaluation tools. There is also an identified need to test and develop measures of clinical learning and to assess student competency. Another way to enhance clinical instruction is to capitalize on missed learning opportunities, shifting from task completion skills to strategies that allow students to enhance clinical reasoning and clinical judgment. It is clear that quality educators who can create a supportive learning environment are needed to facilitate and evaluate students to promote patient safety. Finally, there was no information identified in the literature that discussed how much influence the student characteristic of motivation might have on the process of clinical growth and clinical competency. It is important to consider whether the components of motivation influence clinical growth, to design interventions targeting those areas to maximize the student's ability to grow in the traditional clinical learning environment.

Evaluation in the Clinical Learning Environment

Evaluation in the clinical learning environment is well documented in the

literature (DeBrew & Lewallen, 2014; Hayden, et al., 2014b; Krautscheid et al., 2014;

Ličen & Plazar, 2015; Löfmark & Thorell-Ekstrand, 2014; Manetti, 2018; Seurynck et

al., 2014). Types of studies included: qualitative, instrument development, psychometric

testing, descriptive, random control, an integrative literature review, and a systematic

literature review. A review of the literature on the topic of evaluation in the clinical

learning environment resulted in the emergence of the following concepts: current state

of student evaluation and student evaluation instruments.

Current state of student evaluation. Descriptive studies revealed a need for

better understanding of the purpose of evaluation and expectations of the process as well

as identified challenges such as subjectivity, evaluator bias, misinterpretations of

standard, complex, random, and contextual environment (Krautscheid et al., 2014;

Levett-Jones et al., 2011; McWilliams & Botwinski, 2010). Evaluations need to be

timely and meaningful (Krautscheid et al., 2014). Trained assessors need to be included

in the evaluation process (Levett-Jones et al., 2011; Manetti, 2018). Two qualitative

studies (Amicucci, 2012; DeBrew & Lewallen, 2014) from the educator perspective,

illustrated the challenges in clinical evaluation such as subjectivity, unclear criteria, need

for standardization, and the need for valid and reliable tools. Additional options for

objective clinical evaluation were reviewed and included the use of the Objective

Structured Clinical Examination (OSCE) as an alternative measure of competency

(McWilliams & Botwinski, 2010). One study, found the need for fair and consistent

evaluation that considers multiprofessional views (Helminen, Johnson, Isoaho, Turunen, & Tossavainen, 2017).

Two randomized controlled studies (Franklin, Sideras, Gubrud-Howe, & Lee, 2014; Hayden et al., 2014b) contributed valuable information on the impact of simulation preparation on increasing novice nurses' competence. Hayden and colleagues (2014b) conducted a randomized controlled study producing evidence that replacing up to half of traditional clinical hours with high-quality simulation produces comparable new graduate nurses ready for clinical practice. Another integrative literature review discussed the importance of evaluating clinical competence in a holistic manner with a structured method that does not reduce nursing to skills and tasks (Lejonqvist et al., 2016). A systematic review identified six of seven competency assessment tools commonly used as self-assessments completed by students (Ličen & Plazar, 2015). All of these studies together demonstrated an ongoing need for objective measures of competency, a standard process, and valid and reliable instruments to strengthen the current state of student evaluation.

Student evaluation instruments. Student evaluation instruments include both subjective and objective measures. Subjective measures include self-evaluation and objective measures include observations from an educator. Objective measurements of students' evaluation included: CCEI (Hayden et al., 2014a), Assessment of Clinical Education (ACIEd) (Ulfvarson & Oxelmark, 2012), Clinical Evaluation Tool (CET) (Seurynck et al., 2014), and Lasater Clinical Judgment Rubric (LCJR) (Lasater, 2011). One subjective measure was also included for review, the competency inventory of

student nurses (CINS) (Hsu & Hsieh, 2013). These five instruments developed to evaluate clinical competence were investigated for use in the current research study.

The ACIEd instrument assesses nursing knowledge and competence with a template that is tailor-fitted to create objectives, levels, and criteria of a specific course. The tool is divided into four main categories; nursing, documentation, caring, and skills (Ulfvarson & Oxelmark, 2012). Conversely, the CET used a Likert-type scale ranging from a score of one (cannot perform) through four (independent). The CET evaluates the student in the following areas: communication; professionalism/accountability; the nursing process; patient education/self-management; safety; evidence-based practice; and clinical reasoning (Seurynck et al., 2014). The LCJR instrument is a rubric based on Tanner's model of clinical judgment and incorporates the four phases of noticing, interpreting, responding, and reflecting. The rubric is scored beginning (1) to exemplary (4) for all dimensions (Victor-Chmil & Larew, 2013). Since the completion of the current study, the LCJR was used in one study by educators to evaluate clinical judgment of nursing students in the traditional clinical setting (Manetti, 2018).

The CINS is a self-report instrument measuring competency of knowledge, skills, communication, attitudes, values, and professional judgment for baccalaureate nursing students. This instrument evaluates critical thinking and reasoning, general clinical skills, basic biomedical science, communication and team work, capability, caring, ethics and accountability, and life-long learning (Hsu & Hsieh, 2013). Although these four instruments address certain aspects of clinical competence, none of them except the CCEI fit well conceptually with the constructs of this study (Figure 2).

There is an emphasis in the literature on standardized evaluation with reliable and valid tools and a need for a fair process for evaluation (Hayden et al., 2014a; Hsu & Hsieh, 2013; Ulfvarson & Oxelmark, 2012). A limited number of published studies used the CCEI in simulation (Adamson & Kardong-Edgren, 2012; Adamson et al., 2011; Hayden et al., 2014b) and one study included its use in the traditional clinical learning environment (Hayden et al., 2014b). Therefore, further use of the CCEI in the traditional clinical learning environment is warranted.

The CCEI, has demonstrated validity and reliability when assessing competence in pre-licensure nursing students in both clinical and simulation environments from various regions across the country (Hayden et al., 2014a; Hayden et al., 2014b). The CCEI was developed incorporating the *Essentials of Baccalaureate Education for Professional Practice* and Quality and Safety Education for Nurses (QSEN) principles (Hayden et al., 2014a; Hayden et al., 2014b). It has evolved from the original C-SEI created for use in a simulation environment (Todd et al., 2008) to a tool that was used in the hallmark study in both the simulation and traditional clinical environments (Hayden et al., 2014b). After creation of the C-SEI, interrater and intrarater reliability was established (Adamson et al., 2011). Another study using the C-SEI created an education program as an intervention to improve scoring consistency when using the evaluation instrument. The educational intervention and faculty dialogue that occurred to determine expectations of student performance improved scoring consistency when using the C-SEI (Parsons et al., 2012). One study also used the C-SEI to compare how simulation preparation influenced competence (Franklin et al., 2014). The C-SEI was used as the foundation for creating the CCEI, for use in both the traditional clinical setting as well as

the simulation environment. Reliability and validity of the CCEI was determined, so the instrument could be used in the National Council of State Boards of Nursing (NCSBN) National Simulation Study (NSS; Hayden et al., 2014a) as one measure of clinical competence (Hayden et al., 2014b).

There is standardized process for using the CCEI. The Creighton University website (Creighton University, 2017) that houses the evaluation tool provides training videos and discussion worksheets for educators to use to promote discussion among clinical educators who plan to use the instrument. The CCEI provides an objective, quantifiable, measure using a consistent process with educators discussing and establishing criteria for evaluation of student performance before use of the instrument.

The findings from this review of the literature on evaluation in the clinical learning environment depict the challenges educators face when evaluating students in the complex and contextual learning environment. There is a need for an objective, valid, and reliable instrument that captures student learning in this challenging environment. The CCEI has established reliability and validity in the traditional clinical setting with baccalaureate degree nursing students, incorporates QSEN principles, and is founded upon *Essentials of Baccalaureate Education for Professional Practice.* Further nursing educational research is needed to contribute empirical evidence to establish best practices for clinical evaluation of nursing students.

Multiple Perspectives

A review of the literature and analysis was also undertaken to provide support for the use of multiple perspectives in assessment of clinical growth in the current research study. Collecting multiple perspectives of clinical performance provided an opportunity to gain a better understanding of the multifaceted concept, offered a balanced view of the

performance (Jensen, 2013) and increased awareness of self-performance (Helminen et al., 2017). The literature from various disciplines was searched to include a review of studies that have presented findings of multiple perspectives based on performance ratings. Medicine, nursing, and pharmacy studies have included multiple perspectives on concepts such as clinical reasoning, performance, and competence. One study compared student and faculty ratings of clinical reasoning using the Lasater Clinical Judgment Rubric (LCJR), resulting in students who scored themselves higher than faculty for total LCJR scores, but not significantly higher (Jensen, 2013). The faculty and student ratings were more congruent than findings from other studies (Davis et al., 2006; Lai & Teng, 2011). These findings indicate that faculty assessment may be an accurate measurement of student performance, however coupling faculty and student ratings provides a more balanced view of the performance (Jensen, 2013).

Another study included a comparison of self, physician, and standardized patient ratings of pharmacists' performance using the Global Rating Scales (GRS) during the Family Practice Simulator, a one-day simulation with 13 stations used to teach, learn, and evaluate performance (Lau et al., 2007). The mean overall GRS scores were out of five points from all the stations. Pharmacists were rated by standardized patients with a mean overall GRS score of 4.56, 3.95 from physicians, and 3.60 from self-assessment, indicating much lower self-assessment scores (Lau et al., 2007) and depicting different findings of self-assessment than previous studies (Davis et al., 2006; Jensen, 2013; Lai & Teng, 2011).

Two studies from medicine support the idea that self-perceived competence correlates poorly with objective measures (Davis et al., 2006; Lai & Teng, 2011). One

study recruited medical students to evaluate their self-perceived competence in evidence based medicine (EBM) in comparison with objectively measured competence through the use of the Fresno test of competence in EBM (Lai & Teng, 2011). A systematic review included studies that compared physicians' self-assessment with external measures to determine physicians' accuracy in the process (Davis et al., 2006). The results from that study and systematic review indicate that competence may need to rely on external assessment (Davis et al., 2006; Lai & Teng, 2011).

Perspectives vary based on beliefs, intentions, actions, and strategies (Pratt, Boll, & Collins, 2007). Courneya and colleagues (2008, p. 77) reported that "several people can observe a single incident yet 'see' different things" based on pre-conceived notions. Pratt and colleagues (2007) discovered differences in philosophical perspectives and intentions based upon the lens through which one looks. Various perspectives are utilized by educators (Jarvis-Selinger, Collins, & Pratt, 2007) and students, and it is necessary to provide an opportunity to gather data that provides a complete picture of competence.

The findings from the review of the literature on the use of multiple perspectives suggest a need to capture both the objective measure in addition to the students' self-assessment of performance. Considering multiple perspectives and sources of data provides a form of triangulation for the findings of clinical growth. Self-assessment by the student also provides an opportunity to increase awareness of performance, including both areas for development as well as areas secure in performance. The literature on clinical education, evaluation in the clinical learning environment, and on the use of

multiple perspectives to assess students provide support for the current study. Therefore, the following statement of assumptions, research questions, and hypotheses are provided.

Statement of Assumptions

1. Clinical competency and clinical growth (CCEI change score), are able to be measured by the CCEI.

2. Nursing students have the ability to demonstrate clinical competency and clinical growth in the traditional clinical setting.

3. The length of the clinical experience will provide enough time to demonstrate clinical growth.

4. The student characteristic of motivation, both the expectancy and value components, contribute to the growth of a student in the traditional clinical learning environment.

5. Motivation is changeable and unique to the context of the situation (Linnenbrink & Pintrich, 2002).

6. Students can be motivated in multiple ways (Linnenbrink & Pintrich, 2002).

7. Students can regulate aspects of their own motivation (Linnenbrink & Pintrich, 2002; Pintrich, 2004).

Research Questions

1. Is there a relationship between the expectancy component of student motivation and clinical growth as assessed by educator?

2. Is there a relationship between the expectancy component of student motivation and clinical growth as assessed by student?

3. Is there a relationship between the value component of student motivation and clinical growth as assessed by educator?

4. Is there a relationship between the value component of student motivation and clinical growth as assessed by student?

5. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the ≥ 80 hour clinical course to the end when assessed by educator?

6. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the ≥ 80 hour clinical course to the end when students assess themselves?

7. Is there a relationship between educator and student clinical growth scores from the beginning to the end of a clinical course with senior level students enrolled in a traditional eight-semester BSN program?

Hypotheses

(1) H_0: There will be no statistically significant relationship between the expectancy component of student motivation using MSLQ scores and the educator CCEI change score.

(2) H_0: There will be no statistically significant relationship between the expectancy component of student motivation using MSLQ scores and the student CCEI change score.

(3) H_0: There will be no statistically significant relationship between the value component of student motivation using MSLQ scores and the educator CCEI change score.

(4) H_0: There will be no statistically significant relationship between the value

component of student motivation using MSLQ scores and the student CCEI

change score.

(5) H_0: There will be no statistically significant difference from the beginning to

the end of a clinical course when students are assessed by educators with the

CCEI, measuring clinical growth.

(6) H_0: There will be no statistically significant difference from the beginning to

the end of a clinical course when students are assessed by themselves with the

CCEI, measuring clinical growth.

(7) H_0: There will be no statistically significant relationship between educator and

student clinical growth scores on the CCEI from the beginning to the end of a

clinical course.

Gaps in the Literature

This review of the literature identified notable gaps for clinical education, student

evaluation, and student motivation. In the review of the clinical education literature, the

identified instruments only captured the student perspective and there is a need for

additional studies that consider the educator perspective in the clinical learning

environment to identify current factors that support or hinder facilitation of clinical

growth in this setting. There is an identified need to test and develop measures of student

learning to evaluate student competency while reducing subjectivity of educators.

Evaluation in the clinical learning environment lacked a method of standardization and

illustrated the need for valid and reliable instruments. There were a limited number of

published studies using the objective measurement CCEI in simulation and one study

using CCEI in the traditional clinical learning environment. There is a need for additional studies to use this instrument in the clinical setting to determine if this is an option to facilitate the standardization process of evaluation with a valid and reliable instrument. Although it is clear that student motivation is necessary for clinical growth to occur in the clinical learning environment, there was no information in the literature on how much influence student motivation might have on the process of clinical growth and clinical competency. Furthermore, motivation has been studied in the traditional classroom setting with nursing students, but there are a limited number of studies that occur in the traditional clinical learning environment.

The current study addressed the gaps in the literature for evaluation of students in the clinical learning environment and their motivation in multiple ways. There was an identified need to test and develop measures to evaluate student competency and to reduce the subjectivity of educators. In the current study, the educators attended a training session to address the gap in the literature concerning the lack of standardization in using evaluation instruments for student assessment. To address the need for valid and reliable instruments, the current research study used the CCEI, which has established reliability and validity in the intended population and setting. The current research study adds to the empirical body of knowledge, increasing the number of studies that used the CCEI in the traditional clinical learning environment. Furthermore, this study contributes to the nursing education body of knowledge about the student intrinsic characteristic of motivation, both expectancy and value components, and provides information on how both variables influence clinical growth in the traditional clinical learning environment. Finally, there was an identified gap in the literature regarding clinical education and

clinical learning environment instruments which predominantly collected student perspectives. To address this gap in the literature, the present study included two open-ended questions directed to both students and educators. These two open-ended questions elicited information on factors that contributed most to clinical growth in the clinical course and overall. Data collected from these questions will be analyzed in a future study.

Summary

This chapter provided a comprehensive review of the literature as it relates to the current research study. Information was provided describing the conceptual and philosophical underpinnings and the theoretical model that offers conceptual clarity. A literature review on the current state of knowledge related to the clinical learning environment and student evaluation identified gaps in knowledge that can focus future research. From the literature review, it was apparent that the process of clinical evaluation may be subjective, varying by educator, and a need exists for consistent objective measures to evaluate elements of growth and competency of the student in the clinical learning environment. The themes that emerged from the literature review illustrate the need for studies to be conducted using objective measures, such as the CCEI in the traditional clinical learning environment, not just in the simulated environment. It is also unclear how much the intrinsic student characteristic of motivation, the expectancy and value components, contribute to the process of clinical growth. Understanding the foundation for the study through the information provided in this chapter is the precursor for reading the methodology section in chapter III.

CHAPTER III RESEARCH DESIGN AND METHODS

Chapter III provides a detailed description of the research design and methods for the current research study that examined the relationship between student motivation and clinical growth in baccalaureate degree nursing students (BSN) in the traditional clinical learning environment and measured the concept of clinical growth. The chapter presents the major findings of the pilot study that informed the current study. Building upon the pilot study findings, a comprehensive description of the research design is included followed by the current research study setting and the selection of participants. The data collection method includes a description of the rationales for all decisions and selected procedures. Discussion of validity, reliability, scoring of the Creighton Competency Evaluation Instrument (CCEI) and Motivated Strategies for Learning Questionnaire (MSLQ) instruments, measures of the variables, threats to the internal and external validity, and identifying and controlling for potential sources of bias and error address methodological rigor. Description and rationale for data analyses procedures are included. Finally, provisions for the protection of human rights includes discussion of Institutional Review Board (IRB) status for the current study.

Major Findings from Pilot Study to Inform Dissertation Study

A pilot study (Appendix E) was conducted using the CCEI in data collection from both the clinical educator and student perspective in the traditional clinical learning environment to assess clinical competency and clinical growth. The pilot study allowed the researcher to identify potential challenging areas such as; feasibility of using the CCEI as a data collection tool from the perspective of both the clinical educator and the nursing student; sufficient variability and sensitivity of data collected from the instrument; and to

determine if the training session was adequate for using the instrument. To consider if the instrument yielded data with sufficient variability and sensitivity, descriptive statistics, correlations, and paired-samples *t* tests were analyzed. These findings indicated that the CCEI was an acceptable instrument to use for the current research study. To determine if the training session was adequate for educators to use the CCEI in the traditional clinical learning environment, Cohen's kappa coefficient was calculated. The Cohen's kappa coefficient of .668 indicated substantial reliability, therefore it was determined that the training session was sufficient. To examine the challenge of feasibility of using the CCEI with both students and the clinical educator, feedback was elicited from both nursing students and the educator who used the instrument. The following changes were based upon the findings from the pilot study and were incorporated into the current research study: (1) the training session included discussion of how clinical educators should respond and rate students in instances of unsafe practice; (2) two raters were scheduled for data collection.

The first recommended change from the pilot study included a discussion of how clinical educators should respond and rate students in instances of unsafe practice during the training session. This change was added because of unsafe actions performed by supervised nursing students that could have compromised patient safety during the pilot study. Clinical educator/researcher raters needed to be prepared for how to proceed if these situations occurred while completing the CCEI. For example, during the pilot study, a nursing student working with a staff nurse drew up a medication and did not label it, the researcher spoke up before medication administration. Even though the medication was administered correctly, a "0" was documented on the CCEI for the item

that related to administering medication safely because if the researcher had not intervened this action would not have been performed correctly. Other examples of unsafe actions performed by supervised nursing students included side rails left down and an incorrect amount of medication programmed into the pump. Discussion of how to respond and rate students in instances of unsafe practice was included in the training session for the current research study.

The second recommendation from the pilot study findings included scheduling two raters during data collection. This recommendation was incorporated into the methodology of the current study. During the pilot study, the time requirements for the researcher to be a second rater within a single site was manageable, however, since multiple schools were involved in the current study, it was not possible for the researcher to observe half the nursing students on every occurrence due to schools having the same time and day on different units for their assigned clinical rotation. Therefore, the researcher needed to recruit and train educators from all schools involved in the current study and scheduled two raters during the data collection days. All clinical educators attended a training session to establish an acceptable level of inter-rater reliability. The researcher also completed inter-rater reliability checks with clinical educators throughout the clinical rotations on four occasions. Incorporating changes from the pilot study, the following is the current research study beginning with the selection of participants and setting.

Methodology

Research Design

The current study used a prospective correlational pre-test/post-test design to examine the relationship between student motivation and clinical growth in baccalaureate degree nursing students, in the traditional clinical learning environment, and also to measure the concept of clinical growth. The aims of this study were to: (1) determine if components of the student's motivation contributed to their clinical growth in the traditional clinical learning environment using multiple regression between the MSLQ (Appendix B) and the CCEI (Appendix A) scores; (2) measure nursing students' clinical growth using the CCEI (Appendix A), a valid and reliable instrument, within a consistent process; and (3) compare nursing students' self-assessment of their clinical growth with the educator's assessment using the CCEI (Appendix A), a valid and reliable instrument, within a consistent process. These variables were measured using the Creighton Competency Evaluation Instrument (Hayden et al., 2014a) and the Motivated Strategies for Learning Questionnaire (Pintrich et al., 1991). The items included in the MSLQ Value and Expectancy components and subcomponents are listed in Appendix F. Table 2 depicts a visual representation of the concepts of clinical growth and motivation and the variables selected for the current research study, including the instruments and the level of measurement for each variable.

Table 2: Concepts, Instruments, and Measurements

Concepts	Motivation	Clinical Growth
Variables	Value of motivation (intrinsic and extrinsic goal orientation, and task value) Expectancy of motivation (control beliefs and self-efficacy)	Educator CCEI change scores Student CCEI change scores
Operational/ Instruments	MSLQ	CCEI
Measurement/ Level of Measurement	Motivation Scores Two predictor variables: 1). Value of motivation 14 Items 2). Expectancy of motivation 12 Items Likert Scale 1------------------------7 not at all very true true of me of me Score is calculated by summing items in a scale and calculating the mean Interval Data (score ranging from 1-7)	CCEI change scores CCEI: 23 items 0 = does not demonstrate competency 1= demonstrates competency NA = not applicable Interval Data (total score ranging from 0-23) Educator Change Score Student Change Score Both change scores are calculated by taking the student/educator CCEI total score from Time 2 and subtracting Time 1 Interval Data (score ranging from -1 to 1)

Selection of Participants and Setting

The assessment of the participants (nursing students) occurred in a traditional

clinical learning environment and involved students from three schools of nursing. For

this research study, potential nursing students were limited to students who had a clinical

rotation at a single acute care hospital located in a large city in a Midwestern state of the

United States. Eligibility criteria for this study included 7th and 8th semester nursing

students enrolled in a traditional 8-semester baccalaureate degree program taking a

clinical course that included a minimum of 80 hours during the clinical rotation.

Exclusion criteria included nursing students who were unable to speak fluent English.

This study included nonprobability sampling with multisite convenience samples,

because the potential nursing students were already assigned into clinical groups prior to

study enrollment. Recruitment of nursing students occurred after completion of

institutional review board (IRB) (Appendix G) approval for an exempt study and after

gaining approval from each school of nursing and the acute care hospital. The selected

schools represented both private and public institutions that included similar, traditional

8-semester BSN programs with clinical placement sites on one of the three units

throughout the acute care hospital that are the most similar to one another based on

patient population and workflow.

After each school agreed to join in the study, the nursing students were provided

information related to the study and given the option to participate. There were three

schools of nursing with four clinical educators in the fall and spring semesters that met

the eligibility criteria to be included in the study. All nursing students agreed to

participate in the study. The nursing students had the ability to leave the study at any

time by notifying the researcher. To keep the data accurate and confidential, all nursing

students were assigned a study participant number for identification. To avoid conflict of

interest, none of the nursing students invited to participate were in a class with the researcher.

Power analysis. A power analysis was performed a priori using G*Power to calculate an adequate sample size and verified by a statistician. A one-tailed test was selected based on the theoretical underpinnings of clinical growth indicating that through the process of being in an educational environment, change in nursing students is expected. Pilot study results of the paired samples t tests were used to determine the necessary sample size; a medium effect size (Cohen $d = 0.5$), alpha= .05, and power 80% (Faul, Erdfelder, Lang, & Buchner, 2007). G*Power was also used to calculate necessary sample size for multiple regression with two independent variables and correlations to select the largest required sample size from the three statistical tests that addressed the research questions. The largest required sample size from the three power analyses was a total of 68 nursing students; in order to account for attrition, the sample size was increased by 10% yielding a necessary total sample size of 75 nursing students.

Training Session

To control error and to enhance reliability when using the CCEI, training occurred for the clinical educators on the use of the instrument before data collection. This was a one-day session before the start of the clinical rotation for all clinical educators involved in the study. At the session, the clinical educators were given a training folder including; background information and study aims, the Clinical Educator Research Information sheet (Appendix H), Student Research Information Sheet (Appendix I) Clinical Educator Demographic Questions (Appendix J), Student Demographic Questions (Appendix K), Clinical Educator Summative Clinical Rotation Questions (Appendix L), Student Summative Clinical Rotation Questions (Appendix M), Established Criteria for Items on

the CCEI (Appendix N), copies of the CCEI (Appendix A) and MSLQ (Appendix B), and the Data Collection sheet (Table 3). After an overview of the study and review of the Clinical Educator Research Information sheet (Appendix H), the data collection instruments were discussed; Clinical Educator and Student Demographic Questions (Appendices J, K), the CCEI (Appendix A), the MSLQ (Appendix B) and the Clinical Educator and Student Summative Clinical Rotation Questions (Appendices L, M). Then, the clinical educators watched the CCEI training video located on the Creighton University website (Creighton Univeristy, 2017).

The CCEI was reviewed with the clinical educators to emphasize how to interpret each item using the discussion worksheet and how to score behaviors. Special attention was given to the interpretation of the scoring options; "NA," indicated there was only one opportunity or no opportunities for the student to perform the skill. A "0" score indicated that the nursing student did not consistently perform the skill when having at least two opportunities, and a score of a "1," meant that the student consistently performed the behavior on more than one occasion. Questions were addressed on use of the CCEI and all clinical educators were able to contribute to the discussion and worksheet.

During the one-day training session, after all forms were reviewed, clinical educators had an opportunity to review a pre-recorded nursing student performance to allow practice using the CCEI and to establish inter-rater reliability. Discussion occurred following the rating of the training videos to understand any differences in scores. Clinical educators practiced rating videos and continued to discuss any discrepancies in the scores until an acceptable inter-rater reliability of .80 was achieved and Cohen's

kappa coefficient was at or above moderate reliability, .41-1.00 (Landis & Koch, 1977).

This training session allowed the clinical educators to practice, demonstrate their

understanding of the instrument, and understand differences in ratings from other clinical

educators to promote a more consistent method to score nursing students and minimize

subjectivity. The training session included information on how a clinical educator should

respond if an unsafe patient situation occurs and how to score the nursing student using

the CCEI in that area during assessment. The session reviewed the of data collection

process throughout the study (Table 3). Finally, the researcher collected the Clinical

Educator Demographic Questions (Appendix J). To facilitate data collection, an email

reminder was sent to all clinical educators 1-2 days prior to the introduction of the study

and before each assessment using the CCEI.

Instrumentation

  Creighton Competency Evaluation Instrument. The CCEI is a quantitative

instrument used to evaluate clinical competence and clinical growth of nursing students

that incorporates the core competencies of *The Essentials of Baccalaureate Education for*

Professional Nursing Practice and integrates Quality and Safety Education for Nurses

(QSEN) terminology and concepts (Hayden et al., 2014a). The CCEI instrument is

organized into four categories: assessment, communication, clinical judgment, and

patient safety. Empirical data is produced at the interval level in the form of a total score

ranging from 0-23. There are 23 items measured with the following options: 0 = does not

demonstrate competency, 1 = demonstrates competency, and NA= not applicable.

According to Hayden et al. (2014a, pp 252), the CCEI was found to be a "valid and

reliable instrument to assess clinical competency in pre-licensure nursing students in both

simulation and traditional clinical environments." The version of the CCEI that will be used in this study was modified from the revised Creighton Simulation Evaluation Instrument (C-SEI).

The Creighton Simulation Evaluation Instrument (C-SEI) (Todd et al., 2008) is a 22-item instrument intending to evaluate student competence in the simulation environment. The C-SEI was created using the American Association of Colleges of Nursing (AACN) core competencies and the *Essentials of Baccalaureate Education for Professional Nursing Practice*. Initial pilot testing of the C-SEI included content validity with a panel of experts to determine the necessity, correct placement, and the ability to understand each item. The panel decided that the C-SEI effectively assesses student performance and is a valuable instrument for simulation. Inter-rater reliability was established for each section of the instrument; assessment 84.4%, communication 89.1%, critical thinking 87.5%, technical skills 62.5% and 81.3% rater agreement in the overall tool (Todd et al., 2008). The C-SEI was used before revision of the instrument, further supporting inter-rater reliability ranging from 92-96% with two raters (Gubrud-Howe, 2008). Another published study reported a Cronbach's alpha reliability coefficient of .979 and intraclass correlation (2,1) with a 95% confidence interval (CI) .952 (.697, .993) (Adamson et al., 2011) with intra-rater reliability established between two viewings of simulation scenarios in one study with a 95% CI, .883 (-.001-.992) (Adamson et al., 2011).

The C-SEI was modified by the National Council of States Boards of Nursing (NCSBN) to use the instrument in the NSS. This revised instrument, the CCEI, was modified to include evaluation in both the simulation and traditional clinical learning experiences for associate and baccalaureate degree nursing students (Hayden et al., 2014a).

Revisions included modifications to the 22 items in the initial four categories of the C-SEI

through incorporating QSEN terminology and concepts from the revised 2008 *The*

Essentials of Baccalaureate Education for Professional Nursing Practice, resulting in 23

items in the CCEI. Clarification of scoring was also performed. Content validity was

established using experienced nursing faculty (greater than 6 years of teaching experience)

by determining the ability of the CCEI to evaluate nursing student performance and the

comprehensiveness of the instrument including adequate representation of *The Essentials*

of Baccalaureate Education for Practice and QSEN concepts (Hayden, et al., 2014a).

Inter-rater reliability was established by 31 faculty members watching taped simulation

scenarios (above, at, and below expected level of performance) and used the tool to

evaluate the performances and compare them with an expert rater. The overall agreement

with the expert rater was 79.4%. Cronbach's alpha reliability coefficients were acceptable

for all three video scenarios (.974, .975, and .979). Kappa scores suggest fair to moderate

agreement ranging from .316 to .453 for the three scenarios (Hayden, et al., 2014a). This

instrument demonstrated validity and reliability in both simulation and traditional clinical

learning environments for both associate and baccalaureate degree programs (Hayden et al.,

2014a).

Ten nursing programs were invited to participate in the seminal NCSBN NSS, a

randomized, controlled, longitudinal multisite study using the CCEI as one of the multiple

measures to determine if simulation could replace traditional clinical hours in prelicensure

nursing education (Hayden et al., 2014b). No additional published studies have been

identified that used the CCEI in the traditional clinical setting or that consider multiple

perspectives when using the instrument. This research study addressed these areas and

yielded empirical data to contribute to evidence-based education practices when working with students to provide patient care in the traditional clinical learning environment.

Although the CCEI has established reliability and validity with the intended population, there are still limitations of the instrument to consider. Difficulty in establishing inter-rater reliability exists, thus this was a focus of the training session with the clinical educators. Furthermore, some of the items on the CCEI can be considered subjective when interpreted. At the training session, the clinical educators discussed why scores were assigned when practicing rating on the CCEI to achieve an acceptable inter-rater reliability. Additionally, the CCEI is limited in its ability to affect direct patient outcomes. According to the National Institutes of Health (2015), translational science research moves from preclinical research to practical application in patient care at the bedside and includes levels T_0 (not applicable to translational research) through T_3 (results improve patient outcomes). The CCEI is considered T_2 indicating the translation phase where behaviors carry over into the patient care setting, however it does not meet the higher level (T_3) that moves towards affecting health outcomes (Adamson, Kardong-Edgren, & Willhaus, 2013; National Institute of Health, 2015). Finally, there is an issue of central tendency when using the CCEI, since each item can be scored as a"0," "1," or "NA." Despite these limitations, there is an opportunity to contribute empirical data to the body of nursing education research through this study.

Motivated Strategies for Learning Questionnaire. The MSLQ is a quantitative self-report instrument that was developed to assess motivational orientation and learning strategies for college students in a college course (Pintrich et al., 1991). The MSLQ was developed from the cognitive lens of motivation and teaching and learning strategies that

were adapted from the expectancy-value theory for motivation (Atkinson, 1957) and grounded in a motivation and learning strategy framework (McKeachie, Pintrich, Lin, & Smith, 1986). Development of the instrument occurred from 1982 until 1986 with over 1000 undergraduate students enrolled at the University of Michigan. In 1986, three collaborating universities in the Midwest joined together to collect additional data for statistical and psychometric testing over a three-year period. After each year of data collection, the items on the instrument were reviewed and revised as needed and the conceptual model for the instrument was refined (Pintrich et al., 1991).

The MSLQ is comprised of two sections: the motivation and the learning strategies, including a total of fifteen scales and 81 items. The motivation section of the MSLQ includes six subscales: intrinsic goal orientation, extrinsic goal orientation, task value, control beliefs, self-efficacy for learning and performance, and test anxiety. The learning strategies section of the MSLQ includes nine subscales: rehearsal, elaboration, organization, critical thinking, metacognitive self-regulation, time and study environment, effort regulation, peer learning, and help seeking. The scales are designed to be administered together, independent, or modular, to fit the needs of the researcher (Pintrich et al., 1991). Students score themselves on a seven-point Likert-type scale ranging from 1 "not at all true of me" to 7 "very true of me." A student's score is calculated by summing the items in a scale and taking the average, producing interval data. Items that are reverse coded are addressed before computations (Pintrich et al., 1991).

The motivation section of the MSLQ (Appendix B) for the current study included two components: value (items 1, 3, 6, 8, 9, 11, 13, 14, 18, 19, 20, 22, 23, and 25) and

expectancy (items 2, 4, 5, 7, 10, 12, 15, 16, 17, 21, 24, and 26). The affective component of the motivation section of the MSLQ (five items) was not administered for this study due to the nature of the items that directly related to test taking. The value component is further broken down into three subcomponents; intrinsic goal orientation, extrinsic goal orientation, and task value. The expectancy component includes the two subcomponents control beliefs and self-efficacy for learning and performance. Considering the interest in value and expectancy components of motivation for this study, only the 26 items from the value and expectancy components of the motivation section of the MSLQ (Appendix B) were used in this research study.

Initial validity and reliability of the MSLQ has been established for Midwestern college students who attended a four-year university, studying: natural science, humanities, social science, computer science, and foreign language (Pintrich et al., 1991). The value and expectancy components of the motivation section of the MSLQ used in this study had the following Cronbach's alphas reliability statistics: value component-intrinsic goal orientation, .74; value component-extrinsic goal orientation, .62; value component-task value, .90; expectancy component-control of learning beliefs, .68; expectancy component-self-efficacy for learning and performance, .93 (Pintrich et al., 1991).

The MSQL is a well-established instrument that has been used in multiple studies since the initial psychometrics and statistical analyses was performed in varying contexts and samples. Some of the contexts for the MSLQ include online learning environments (Ali et al., 2014; Cook et al., 2011; Nagelsmith, Bryer, & Yan, 2012; Pintz & Posey, 2013), nursing theory courses (Elder et al., 2015; Nagelsmith et al., 2012; Parlett, 2012;

Robb, 2014) and in the clinical setting (Carter et al., 2018; Cho et al., 2017; Elder et al., 2015; Pelaccia et al., 2009). Not only has the MSLQ been used in various contexts, but also with an assortment of samples including: baccalaureate degree nursing students (Carter et al., 2018; Elder et al., 2015; Everett, Salamonson, Trajkovski, & Fernandez, 2013; Robb, 2014), accelerated second degree bachelor of science in nursing students (El-Banna, Tebbenhoff, Whitlow, & Wyche, 2016), newly enrolled graduate nursing students (Everett et al., 2013; Pintz & Posey, 2013), adult nursing students (Nagelsmith et al., 2012), and other health science fields such as medicine residents (Cook et al., 2011) and medical students (Cho et al., 2017; Kickert, Stegers-Jager, Meeuwisse, Prinzie, & Arends, 2018; Pelaccia et al., 2009; Stegers-Jager, Cohen-Schotanus, & Themmen, 2012).

The population for the current research study included BSN students in the traditional clinical learning environment, a similar population and setting to a previous study with the same subscales from the MSLQ (Pelaccia et al., 2009). Pelaccia et al. (2009) reported Cronbach's reliability coefficients for the following MSLQ subscales: intrinsic goal orientation (.69), perceived task value (.90), self-efficacy (.92), control of learning beliefs (.68), and extrinsic goal orientation (.63). Pelaccia et al. (2009) administered the motivation section of the MSLQ and left out the affective subscale that includes 5 items on test anxiety, the same decision as the current study.

Confirmatory factor analyses (CFA) were performed to establish factor validity for both motivation and learning strategies items. All 31 items for the motivation scale were tested to determine how well they fit with the six latent factors and the 50 learning strategy items were also tested to see how well they fit with the nine latent factors

(Pintrich et al., 1991). The results of the CFA show reasonable factor validity (Pintrich et al., 1991). Predictive validity was established by examining correlations between academic performances such as the final course grade for each item and the scales from the MSLQ, yielding significant findings.

Data Collection

The CCEI (Appendix A) was used in its entirety as an observational and self-assessment instrument to address the research questions. The motivation section of the MSLQ (Appendix B) was used as a nursing student self-report measure to understand the relationship between components of motivation and clinical growth. The study occurred over two semesters to achieve the necessary sample size. The timeline for the current study was broken into the conceptual, planning, empirical, analytic, and dissemination phases (Appendix O).

Data collection occurred over three days for each school of nursing (Table 3). Day one of data collection occurred during the nursing student hospital orientation day. During day one, the researcher introduced and reviewed: the study, the Student Research Information Sheet (Appendix I), the CCEI (Appendix A), and the MSLQ (Appendix B). The researcher collected the completed Student Demographic forms (Appendix K).

Day two of data collection occurred on the first day nursing students were assigned to deliver patient care at the hospital. During this day, clinical educators and trained raters had to interact with or observe a student for a minimum of 60 minutes in order to complete a CCEI for a student who provided care for one patient throughout the clinical day. The clinical educator and trained rater had to observe student behaviors in order to provide a score on any item from the CCEI. Nursing students and clinical

educators/trained raters used the Established Criteria for Items on the CCEI (Appendix N) as a reference for each item on the instrument. The CCEI was completed by the students in the absence of the clinical educator and trained rater after post-conference discussion had occurred before leaving the hospital. Clinical educators and trained raters completed the CCEI for eligible students in the absence of the students after post conference occurred. The nursing students also completed the MSLQ (Time 1) during this allotted time. The researcher collected the completed CCEI instruments from the students and clinical educators after post conference discussion.

Day three of data collection occurred on the last day students were assigned to deliver patient care. The same requirements and format for data collection that occurred on day two were used on day three. The students completed the CCEI after post conference discussion using the completed discussion worksheet. The students also completed the MSLQ instrument (Time 2) and the Student Summative Clinical Rotation Questions (Appendix M). The clinical educator/trained raters completed the CCEI for each student who was assessed (minimum of 60 minutes of observation or interaction) after post conference discussion using the completed discussion worksheet and the Clinical Educator Summative Clinical Rotation questions (Appendix L). The researcher collected the completed CCEI instruments from students and clinical educators/trained raters, the MSLQ instruments, the Educator Summative Clinical Rotation Questions and Students Summative Clinical Rotation Questions. The data from the student and clinical educator Summative Clinical Rotation Questions will be analyzed in a future study. The researcher visited the clinical settings during data collection days for each school to collect the de-identified data from the clinical educators and nursing students at the end

of the clinical day. Each school used the same process for data collection, to ensure

consistency throughout the multiple sites. Table 3 provides an overview of the data

collection process that was used for the current study.

Table 3: Data Collection

	Researcher	Clinical Educators/Raters	Student
Training Session	1). Provided an overview of the study 2). Reviewed Clinical Educator Research Information sheet 3). Reviewed data collection instruments 4). Provided training on how to use and score a student with the CCEI 5). Established inter-rater reliability 6). Reviewed Data Collection sheet (Day 1-3) 7). Collected Clinical Educator Demographic form	1). Completed the Clinical Educator Demographic form	
Day 1: Introduction to the Study	1). Introduced the study 2). Reviewed Student Research Information Sheet 3). Reviewed the CCEI and MSLQ 4). Collected the Student Demographic forms		1). Completed the Student Demographic form
Day 2: First day students are assigned to deliver patient care	1). Collected CCEI instruments from students and clinical educators after post conference discussion 2). Collected MSLQ instruments	1). Completed the CCEI for each student assessed (minimum of 60 minutes of interaction or observation) after post conference discussion using the completed discussion worksheet	1). Completed the CCEI after post conference discussion using the completed discussion worksheet 2). Completed the MSLQ instrument
Day 3: Last day students are assigned to deliver patient care	1). Collected CCEI instruments from students and clinical educators 2). Collected the MSLQ instruments 3). Collected Educator Summative Clinical Rotation Questions and Student Summative Clinical Rotation Questions 4). Handed out gift cards to students and clinical educators for participation	1). Completed the CCEI for each student assessed (minimum of 60 minutes of interaction or observation) after post conference discussion using the completed discussion worksheet 2). Completed the Educator Summative Clinical Rotation Questions	1). Completed the CCEI after post conference discussion using the completed discussion worksheet 2). Completed the MSLQ instrument 3). Completed the Student Summative Clinical Rotation Questions

Note: Researcher performed inter-rater reliability checks with clinical educators.

Inter-rater Reliability Checks

During day two and three of data collection, the researcher was often one of the

trained raters. On these days, inter-rater reliability checks occurred by rating nursing

students at the same time as the clinical educator. If the Cohen's kappa coefficient was

not at or above medium reliability, .41-1.00 (Landis & Koch, 1977), re-training on the

CCEI occurred for the clinical educator. Furthermore, if the observed level of agreement

between raters did not meet or exceed $P_o = .80$, discussion occurred between raters to

understand discrepancy in the scores and both raters had an opportunity to assess the student a second time.

Inter-rater reliability checks were performed on four occasions to ensure an acceptable level of agreement between raters throughout the study. The acceptable level of agreement among raters was met on three of the four occasions; P_o = .87, .83, .78, and .91. When the overall agreement percentage did not meet .80, discussion occurred between raters on discrepancy in scores. In this instance, the student was rated a second time by both raters and then the acceptable criteria was met, P_o = .83. Before the study began, the acceptable Cohen's Kappa coefficient was determined to be at or above medium reliability, .41-1.0 (Landis & Koch, 1977). Cohen's kappa coefficient was within the acceptable range on each of the four interrater reliability checks; .75, .72, .74, and .81.

Data Analysis

Once the data were collected from the nursing students and the clinical educators at the multiple sites, the information was entered using version 24 of the statistical software package SPSS. All responses were verified that they were in the same format and were examined for missing values. Data analysis was conducted with statistical consultation.

Data analysis included testing homogeneity of the sample by using t-test for independent samples to compare the 7th and 8th semester nursing students using CCEI Time 1 scores to determine if the participants from the two semesters were homogeneous enough to be considered a single sample. The significance level was less than .05, indicating there was no significant difference between the 7th and 8th semester students; $t(72) = 1.22$, $p = .23$.

Additional analyses found no violation of the assumptions of normality, linearity, multicollinearity, and homoscedasticity. Initial pilot data supported statistical analysis using paired-samples *t*-tests and Pearson product-moment correlation. Multiple regression was used to determine the relationship between the student motivation scores on clinical growth scores in the traditional clinical environment.

Research Questions, Hypothesis, Statistical Test, and Data

An overview of the relationship between research questions, instruments, variables, and the analysis methods selected for the current study is depicted in Table 4.

Table 4: Relationship between Research Questions, Instruments, and Analysis

Research Question	Instrument	Variable	Method
1. Is there a relationship between the expectancy component of student motivation and clinical growth as assessed by educator?	MSLQ CCEI	Expectancy Component from MSLQ Educator CCEI Change Score	Multiple Regression
2. Is there a relationship between the expectancy component of student motivation and clinical growth as assessed by student?	MSLQ CCEI	Expectancy Component from MSLQ Student CCEI Change Score	Multiple Regression
3. Is there a relationship between the value component of student motivation and clinical growth as assessed by educator?	MSLQ CCEI	Value Component from MSLQ Educator CCEI Change Score	Multiple Regression
4. Is there a relationship between the value component of student motivation and clinical growth as assessed by student?	MSLQ CCEI	Value Component from MSLQ Student CCEI Change Score	Multiple Regression

5. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the $\geq$ 80 hour clinical course to the end when assessed by educator?	CCEI	Educator CCEI Score Time 1 Educator CCEI Score Time 2	Paired-samples *t*-test
6. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the $\geq$ 80 hour clinical course to the end when students assess themselves?	CCEI	Student CCEI Score Time 1 Student CCEI Score Time 2	Paired-samples *t*-test
7. Is there a relationship between educator and student clinical growth scores from the beginning to the end of a clinical course with senior level students enrolled in a traditional eight-semester BSN program?	CCEI	Educator CCEI Change Score Student CCEI Change Score	Pearson product-moment correlation

Each research question from the current research study is presented, including the hypothesis, with justification for the statistical test and data used. Findings from this study that address the research questions are presented in a manuscript submission included in Chapter IV and V.

1. Is there a relationship between the expectancy component of student motivation and clinical growth as assessed by educator?

    H_0: There will be no statistically significant relationship between the expectancy component of student motivation using MSLQ scores and the educator CCEI change score.

2. Is there a relationship between the expectancy component of student motivation and clinical growth as assessed by student?

   H_0: There will be no statistically significant relationship between the expectancy component of student motivation using MSLQ scores and the student CCEI change score.

3. Is there a relationship between the value component of student motivation and clinical growth as assessed by educator?

   H_0: There will be no statistically significant relationship between the value component of student motivation using MSLQ scores and the educator CCEI change score.

4. Is there a relationship between the value component of student motivation and clinical growth as assessed by student?

   H_0: There will be no statistically significant relationship between the value component of student motivation using MSLQ scores and the student CCEI change score.

Multiple regression was selected to determine the influence of the intrinsic student characteristics of motivation, value and expectancy components, on clinical growth in the clinical learning environment, addressing the first, second, third, and fourth research questions. The independent variables, value component of motivation and expectancy component of motivation, were selected based on the antecedent findings from the concept analysis of clinical growth (Barkimer, 2016), using past research or theory to support the selected variables (Warner, 2013). Selecting multiple regression as a statistical method allowed the researcher to understand how much variance in the CCEI

score was explained by the independent variables (Warner, 2013). Understanding the strongest contributors to the CCEI score can provide useful information for future studies that investigate interventions addressing those areas and enhance clinical growth. The two independent variables, expectancy component of motivation and value component of motivation produced empirical data from the MSQL (Appendix B). The independent variable, expectancy component of motivation, was comprised of the items from the control of learning beliefs and the self-efficacy for learning and performance subcomponents. The independent variable, value component of motivation, included items from the intrinsic goal orientation, extrinsic goal orientation, and task value subcomponents. This information allowed the researcher to use these independent variables to determine if components of motivation had a relationship with clinical growth.

5. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the ≥ 80 hour clinical course to the end when assessed by educator?

    H_0: There will be no statistically significant difference from the beginning to the end of a clinical course when students are assessed by educators with the CCEI, measuring clinical growth.

6. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the ≥ 80 hour clinical course to the end when students assess themselves?

H_0: There will be no statistically significant difference from the beginning to the

end of a clinical course when students are assessed by themselves with the CCEI,

measuring clinical growth.

Paired-samples *t*-test were selected since assumptions were met for parametric

analysis. This statistic determined if there was a change in the overall score of the CCEI

from the initial assessment (Time 1) to the final assessment (Time 2), answering the fifth

and sixth research questions. The data were collected from the same nursing students at

two separate times, therefore the paired sample *t*-test was appropriate (Warner, 2013) for

use with both educator and nursing student ratings. Assumptions were met to select the

paired-sample *t*-tests.

7. Is there a relationship between educator and student clinical growth scores from

   the beginning to the end of a clinical course with senior level students enrolled in

   a traditional eight-semester BSN program?

   H_0: There will be no statistically significant relationship between educator and

   student clinical growth scores on the CCEI from the beginning to the end of a

   clinical course.

Pearson product-moment correlation was utilized to examine correlations between

the clinical educator's and student's change scores on the CCEI from the beginning to the

end of a clinical course to address the seventh research question. A limited number of

correlations based upon theoretical propositions were run to minimize the risk of Type 1

error (Warner, 2013). The hypothesis was based upon the pilot study findings, which

indicated there was a nonsignificant medium, negative correlation between the student

and educator change scores. Assumptions were met to use Pearson product-moment correlation (Warner, 2013).

Protection of Human Subjects

This study was submitted to IRB for Exempt review. The researcher provided a subject information sheet (Appendices H, I), informing each potential participant of the time commitment to the study. A small incentive of $5 was provided to each nursing student upon completion of the second CCEI self-assessment as well as a $50 incentive for each clinical educator upon the completion of the second CCEI for the students in their group. IRB approval was granted by Marquette University for the pilot study and amendments were approved for the expansion of this study (Appendix G).

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Summary

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Chapter III presented the methodology of the current research study including how the pilot study informed the current study, selection of participants and the setting, instrumentation, data collection, data analysis, and a summary. Findings from this research study provide an opportunity to advance nursing education research by contributing to the body of knowledge with empirical evidence related to the assessment of clinical competency in baccalaureate degree nursing students in the traditional clinical learning environment. The study examined the relationship between student motivation and clinical growth, providing the educator with information that can be used to create adaptations to enhance student learning in the traditional clinical learning environment. A manuscript option was selected; therefore, the results and significance of the study have been submitted for possible publication.

CHAPTER IV AND V

The manuscript option for dissertation requires two manuscripts, one of which includes the major findings from the current research study. The first manuscript included a concept analysis in preparation for the study: Barkimer, J. (2016). Clinical growth: An evolutionary concept analysis. *Advances in Nursing Science*, *39*(3), E28–E39. The second manuscript "Clinical Growth and Nursing Student Motivation in the Traditional Clinical Learning Environment" is presented next and will be submitted for publication.

Abstract

Background: Assessment of students in traditional clinical learning environments is difficult. When the clinical educator uses a standard process and understands students' motivation for learning, then adaptations in teaching and self-regulatory strategies can be implemented to enhance learning and measure clinical growth.

Method: A prospective, correlational, pre-test/post-test design was used to examine the relationship between motivation and clinical growth in baccalaureate degree nursing students. Students were assessed by the educator and also performed self-assessment at the beginning and end of the semester.

Results: A statistically significant difference was found in both educator assessment and student self-assessment using the Creighton Competency Evaluation Instrument (CCEI). When specific components of motivation were examined, task value was negatively associated with both student and educator change scores and intrinsic goal orientation was significantly associated with educator change scores.

Conclusion: The findings from this study suggest that assessment using a standard process with the CCEI is fair and objective measurement of students. Further exploration of motivation relating to clinical growth is warranted.

Clinical Growth and Nursing Student Motivation in the

Traditional Clinical Learning Environment

Nursing students are exposed to unpredictable conditions in the complex and challenging traditional clinical learning environments. Assessment of students in these environments is difficult considering the absence of standard guidelines and inconsistent process with the lack of interrater reliability between educators. Within this atmosphere, educators need to contextually understand a student's motivation for learning to facilitate adaptions in teaching strategies and promote and measure clinical growth. Educators who understand student motivation as it relates to clinical growth can teach students various self-regulatory strategies such as goal setting, self-monitoring, help-seeking, and self-evaluation and the appropriate use of these approaches to facilitate their growth and development.

Background

Assessment of nursing students in traditional clinical learning environments is challenging due to subjectivity and educator bias (Krautscheid et al., 2014; McNelis et al., 2014). A need exists for standardization in the assessment process that uses valid and reliable instruments with clear criteria (DeBrew & Lewallen, 2014; Hooper et al., 2016) to promote clinical growth of nursing students in the traditional clinical learning environment. Clinical growth is defined as "a holistic representation of progress in the following capacities: learner's ability to achieve a higher level of thinking, socialization to the profession with moral considerations, cognitive, psychomotor, and affective skill

development, self-reflection, self-investment, interpersonal communication, and the ability to link theory to practice" (Barkimer, 2016, p.E33). Research is needed to test clinical assessment tools that are more objective in nature (McNelis et al., 2014), easy to use, and provide an opportunity to communicate effective assessment of student performance (Hooper et al., 2016).

To optimize clinical growth, it is imperative that educators understand its antecedents, specifically, student motivation. Motivation is conceptualized with two components: (1) a value component which includes the subcomponents; intrinsic goal orientation, extrinsic goal orientation, and task value and (2) an expectancy component which includes the subcomponents; beliefs related to control of learning and self-efficacy. The value component of motivation addresses the reasons why the student is participating in the learning (intrinsic and extrinsic goal orientation) and the appraisal of the importance or usefulness of the information (task value). The expectancy component of motivation involves the belief that one's effort will result in a positive outcome (control of learning) and the judgment about being able to perform a task (self-efficacy) (Pintrich, Smith, Garcia, & McKeachie, 1991). Higher levels of these motivational constructs are associated with improved academic performance (Kickert, Stegers-Jager, Meeuwisse, Prinzie, & Arends, 2018; Parlett, 2012).

Research investigating nursing student motivation and assessment have been reported previously, yet, there remain limited studies conducted in the traditional clinical learning environment. Prior studies measured the construct of motivation using the Motivated Strategies for Learning Questionnaire (MSLQ) in a similar manner to the current

study with five additional items that measure test anxiety (Cho et al., 2017; Nagelsmith, Bryer, & Yan, 2012; Parlett, 2012).

Prior studies found significant findings for the task value and intrinsic goal orientation variables. Kickert et al., (2018) found higher average scores on the motivational subcomponent task value when there were higher stake performance standards, indicating difficult goals can be motivating as long as they as seen as important to the person. Parlett (2012) examined the differences between associate and bachelor degree nursing students' motivational, learning, and social skills and found that there was a significant relationship between task value and academic achievement as well as between intrinsic goal orientation and academic achievement. There is a need for additional studies, such as the current study, that examine the construct of motivation in the clinical learning environment.

Theoretical Frameworks

Clinical growth is complex and multifaceted, utilizing a student-centered approach that can be challenging for educators to evaluate (Barkimer, 2016). Clinical growth can occur in three learning domains simultaneously; cognitive, affective, and psychomotor (Bloom et al., 1956) and needs to be assessed with an instrument that captures the learning and growth in all domains. Clinical growth prioritizes progress made in all learning domains and considers the consequences and antecedents that must be present to facilitate learning, such as the intrinsic student characteristic of motivation.

The Model of Clinical Growth (Figure 1) and the expectancy-value theory were selected as theoretical frameworks for the current study to understand the relationship between motivation and clinical growth. The expectancy-value theory involves the

relationship between a person's choice, perseverance, and performance in relation to personal beliefs on how well he/she will perform and how much he/she values the learning (Atkinson, 1957).

The aims of this study were to: (1) determine if aspects of nursing students' motivation contribute to their clinical growth in the traditional clinical learning environment; (2) measure nursing students' clinical growth using the CCEI within a consistent process; (3) compare nursing students' self-assessment of their clinical growth with the educator's assessment. The following research questions were investigated:

1. Is there a relationship between the expectancy and value components of student motivation and clinical growth as assessed by educator and student?

2. Is there evidence of clinical growth of students in a senior level course in a traditional eight-semester BSN program from the beginning of the ≥ 80 hour clinical course to the end when assessed by educator and when students performed self-assessment?

3. Is there a relationship between educator and student clinical growth scores from the beginning to the end of a clinical course with senior level students enrolled in a traditional eight-semester BSN program?

Methodology

Design

This research study used a prospective, correlational, pre-test/post-test, design to examine the relationship between student motivation and clinical growth in baccalaureate degree nursing students in the traditional clinical learning environment and to measure the concept of clinical growth.

Sample

Recruitment of nursing students used a nonprobability, multisite, convenience sampling method since participants were previously assigned into clinical groups prior to study enrollment. Following Institutional Review Board approval, 7th and 8th semester nursing students, enrolled in a traditional 8-semster Bachelor of Science in Nursing (BSN) degree program taking a clinical course with a minimum of 80 hours were invited to participate in the study. Participants came from three nursing schools (private and public institutions) in a large Midwestern city. The schools had similar, traditional 8-semester BSN programs with clinical placement sites on one of three units throughout a single acute care hospital with comparable patient populations and workflow. All students who met the eligibility criteria were invited to participate and had the ability to leave the study at any time. To ensure confidentiality, all participants received a random number for identification. Assessment data of student performance collected for the purpose of the study did not affect the course or clinical grade.

A power analysis using G*Power conducted a priori and verified with statistical consult, calculated an adequate sample size. The required sample size yielded a total of 68 nursing students; however, to account for 10% attrition and the predetermined number of students in clinical groups, 74 participants were recruited. On the final day of data collection, two participants were absent and removed from the study, therefore the final sample included 72 participants.

The mean age of the sample was 23 years ($SD = 3.43$), ranging from 20-39 years, with 94% of the participants being female, 80% identifying as Caucasian, 3% African American, 1% Hispanic/Latino, 10% Asian American, and 6% identifying with two or

more races. Furthermore, 79% of all participants identified having previous experience in health care.

Instruments

Creighton Competency Evaluation Instrument. The CCEI is a quantitative instrument that incorporates the core competencies of *The Essentials of Baccalaureate Education for Professional Nursing Practice* (American Association of Colleges of Nursing, 2008) and integrates Quality and Safety Education for Nurses (QSEN; QSEN.org) terminology and concepts, used to assess clinical competence of nursing students (Hayden, Keegan, Kardong-Edgren, & Smiley, 2014a). The CCEI consists of 23 items measured with the following options: 0 = does not demonstrate competency, 1 = demonstrates competency, and NA = not applicable therefore, total scores range from 0-23.

The CCEI was modified from the original instrument, the Creighton Simulation Evaluation Instrument (C-SEI) (Todd et al., 2008) for inclusion in the National Simulation Study (NSS); (Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014b). Content validity was established during the NSS by experienced nursing faculty and was found to be a "valid and reliable instrument to assess clinical competency in pre-licensure nursing students in both simulation and traditional clinical environments (p. 252)."

The CCEI is a dichotomous instrument with two choices: 1) consistently demonstrated and 2) did not consistently demonstrate. However, during the first student assessment (Time 1) in the current study, every participant was not assessed on each item in the CCEI, therefore the NA, or not applicable option was selected, causing missing data. Therefore, the alpha and omega values were estimated for the educator and student versions of the CCEI from a confirmatory factor analysis based on polychoric correlation,

a method to estimate relationships between categorical variables. For the educator scored CCEI (Time 1), alpha = .91 and omega = .88 and for the student scored CCEI (Time 1), alpha = .91 and omega = .86. Therefore, the estimated alpha (Cronbach, 1951) and omega (Raykov, 2001) coefficients were found to be acceptable. For the educator assessment of students, CCEI (Time 2), Cronbach's alpha = .88 and was acceptable. The CCEI had good internal consistency when used by students for self-assessment, with Cronbach's alpha = .80 and .78 after the first (Time 1) and last (Time 2) day students were assigned to deliver patient care, respectively.

Motivated Strategies for Learning Questionnaire. The Motivated Strategies for Learning Questionnaire (MSLQ) is a quantitative, self-report instrument that assesses motivational orientation and learning strategies for students in a college course (Pintrich et al., 1991). The MSLQ was developed from the cognitive lens of motivation and teaching and learning strategies and adapted from the expectancy-value theory for motivation (Atkinson, 1957). There are two sections in the MSLQ: the motivation section and the learning strategies section, including a total of 15 scales and 81 items. The 15 scales are designed to be administered together, independent, or in a modular format, to fit the needs of the researcher (Pintrich et al., 1991). Students score themselves on a seven-point Likert-type scale ranging from 1 "not at all true of me" to 7 "very true of me." A student's score is calculated by summing the items in a scale and calculating the mean score, producing interval data (Pintrich et al., 1991).

Validity and reliability was established for the MSLQ initially for Midwestern college students attending a four-year university studying a variety of areas including natural science, humanities, and social sciences (Pintrich et al., 1991). Cronbach's alpha

inter-item correlation statistics were calculated using the motivation section of the MSLQ: value component-intrinsic goal orientation was .74, value component-extrinsic goal orientation was .62, value component-task value was .90, expectancy component-control of learning beliefs was .68 and the expectancy component-self-efficacy for learning and performance was .93 (Pintrich et al., 1991).

In the current study, the CCEI was used in its entirety as an educator assessment of student performance in the clinical course and as a self-assessment by the students. Additionally, the motivation section of MSLQ (excluding the test anxiety items) was used as a nursing student self-report measure to understand the relationship between aspects of motivation and clinical growth. The 26 items from the value and expectancy components of the motivation section of the MSLQ were used in the current research study (with the exclusion of test anxiety items) and the internal consistency was acceptable with a Cronbach's alpha = .91 on both the first (Time 1) and last (Time 2) day students were assigned to deliver patient care, respectively.

Training Session

Before data collection, training occurred for all the clinical educators on the use of the CCEI to enhance reliability and minimize bias that could threaten validity. The researcher reviewed use of the CCEI with all clinical educators on how to interpret each item and how to score student behaviors. During the training session, all four clinical educators and the researcher viewed and assessed a pre-recorded nursing student performance to establish inter-rater reliability. Discussion occurred following the rating of the training video to understand any differences in scores. The inter-rater reliability among the five raters was 83% agreement with a Cohen's kappa coefficient of .80 indicating

substantial agreement (Landis & Koch, 1977). Students received training on the use of the

CCEI prior to start of study during post-conference discussion.

Data collection

Data collection occurred over two consecutive semesters. Nursing students

received an introduction to the study, followed by two days of assessment of students by

the clinical educator for each school of nursing. The first assessment of student

performance and motivation (Time 1), occurred on the first day that students were

assigned to deliver patient care and the second assessment of student performance and

motivation (Time 2), occurred on the last day students were assigned to deliver patient

care. The researcher used the same data collection process for each school to ensure

consistency across the multiple sites.

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Data Analysis

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Data were analyzed using SPSS version 24 and semTools package (semTools

Contributors, 2018) version 0.4-15.930 in R (R Core Team, 2018) and lavaan (Rosseel,

2012) for reliability estimation and the software mice for multiple imputations (Buuren &

Groothuis-Oudshoorn, 2011). Descriptive statistics described the characteristics of the

study sample.

There were no differences in Time 1 CCEI scores for 7th and 8th semester

students, $t_{(72)} = 1.22$, $p = .23$, allowing participants to be combined into one sample. This

was confirmed using the Mann-Whitney U to compare demographic variables and to

determine there were no statistically significant differences between the participants from

the three schools. Additional analyses found no violation of the assumptions of

normality, linearity, multicollinearity, and homoscedasticity.

Results

Relationship of Expectancy and Value Components of Student Motivation and Clinical Growth

To understand if there was a relationship between student motivation and clinical growth, multiple regression analysis assessed the relationship between the expectancy and value components of student motivation and clinical growth as assessed by the educator and by the student. For the educator, the expectancy and value components of motivation explained less than 1% of the variance in the educator change score, $R^2 = .003$, $F_{(2, 69)} = .106$, $p = .90$. For the students' self-assessment, the expectancy and value components of motivation explained 2% of the variance in the student change score, $R^2 = .020$, $F_{(2, 69)} = .718$, $p = .491$. Therefore, expectancy and value components of motivation were not significantly related to students' clinical growth when assessed by educators or students. This means that when examining the relationship between motivation and clinical growth, it is necessary to consider all five subcomponents of motivation (intrinsic goal orientation, extrinsic goal orientation, task value, control of learning, and self-efficacy).

In an attempt to understand the five subcomponents of student motivation in relation to clinical growth, exploratory analysis was performed using multiple regression with an adjusted R-squared to account for the effects of the smaller sample size and the number of predictors (Warner, 2013). Task value as a predictor variable made a statistically significant contribution to both the student (Table 1) and educator change scores (Table 2), indicating that the value placed upon the learning or task in the traditional clinical learning environment can predict the clinical growth of a nursing student. Additionally, the predictor intrinsic goal orientation made a statistically

significant contribution to the educator change score (Table 2), but not the student change score, indicating that intrinsic goal orientation can predict the clinical growth of a nursing student when assessed by the educator in the traditional clinical learning environment. The regression analysis of the educator change score was statistically significant, $R^2 =$ .157, $F_{(5, 66)} = 2.461$, $p = .042$, indicating that educator change scores could be predicted at levels significantly above chance from the five subcomponents of the motivation section in the MSLQ (Table 2). Therefore, if educators have a better insight into the five subcomponents of student motivation at the beginning of the clinical rotation, they may be able to better facilitate growth of the nursing students by providing them with self-regulatory strategies that contribute most to clinical growth such as task value and intrinsic goal orientation.

Evidence of Clinical Growth as Assessed by Educators and Students

To test if there was evidence of clinical growth, a paired-samples *t*-test was conducted on the educator CCEI scores to determine if there was a statistically significant change from the initial assessment (Time 1) to the final assessment (Time 2). This test determined whether the assessment process and instrument used were sufficient to measure a student's clinical growth in the traditional clinical learning environment. There was a statistically significant difference in the educator CCEI scores from Time 1 ($M =$ .519, $SD = .252$) to Time 2 ($M = .841$, $SD = .164$), $t_{(71)} = -13.28$, $p < .001$ (two-tailed). The mean increase in educator CCEI scores was .321 with a 95% confidence interval ranging from -.370 to -.273. The calculated Cohen's effect size index statistic (1992), $d =$ 1.57, indicated a large effect size.

A second paired-samples *t*-test was conducted on the students' self-assessment CCEI scores to determine if there was a statistically significant change from zero from the initial assessment (Time 1) to the final assessment (Time 2) when conducted by the student. This test also helped to determine if the assessment process and instrument used for self-assessment were acceptable to measure clinical growth in the traditional clinical learning environment. There was a statistically significant difference in the student CCEI scores from Time 1 (*M* = .724, *SD* = .206) to Time 2 (*M* = .899, *SD* = .121), $t_{(71)}$ = -7.87, *p* < .001 (two-tailed). The mean increase in student CCEI scores was .175 with a 95% confidence interval ranging from -.220 to -.131. The Cohen's effect size index statistic (1992), *d* = .93 indicated a large effect size. Therefore, these findings suggest that the CCEI is an instrument that can be used to measure clinical growth in the traditional clinical learning environment by educators and students. These findings support that the CCEI is a tool that can be used as an assessment process that is objective and consistent when inter-rater reliability is established.

Relationship of Educator and Student Clinical Growth Scores

The Pearson product-moment correlation coefficient was used to investigate the relationship between educator and student clinical growth scores. The findings were not statistically significant demonstrating a small, negative correlation between the two variables, *r* = -.11, *p* = .34, with high educator change scores associated with low student change scores (Cohen, 1988). This finding indicates that the greater the change in the educator CCEI scores from the beginning to the end of the clinical rotation, the less change in the student CCEI scores during the clinical rotation. This negative correlation occurred even though students and educators were provided the same criteria when using the CCEI. Therefore, although the process of self-assessment provided an opportunity

for students to engage in self-reflection, the student assessments were not consistent with the educator's assessments. This finding may suggest that educators perceive nursing students as learners who need the allotted clinical rotation time to grow and develop, while nursing students may perceive themselves as more competent in several areas at this point in their learning trajectory, accounting for the negative correlation. This finding is essential for educators to understand, so there is an opportunity to promote discussions when these differences emerge.

Discussion

Measuring motivation with the MSLQ, allows an educator to share scores with each individual student to identify specific self-regulatory strategies that could improve their motivation. In this study, multiple regression with value and expectancy components predicting clinical growth yielded non-statistically significant findings, indicating the need for further exploration of the subcomponents of motivation. Exploratory analysis using the Adjusted R Square value revealed that the task value was a significant contributor to clinical growth in the student and educator change scores and that intrinsic goal orientation was a significant contributor to educator change scores, therefore, if an educator has the opportunity to understand a student's motivation scores at the beginning of the clinical rotation, the educator can select evidence based instructional activities to facilitate clinical growth.

Furthermore, understanding student motivation provides educators insight to alter instructional activities that include goal setting or reflection assignments (Linnenbrink & Pintrich, 2002), connecting valuable information learned to future practice and facilitating student academic success. To address intrinsic goal orientation and task value, the educator

can have the student set goals for the duration of the clinical rotation that can focus the experience, enhancing student engagement while addressing intrinsic goal orientation and make learning experiences relevant, incorporating the importance of task value in motivation.

For example, since task value was an indicator of clinical growth, educators could have students write three goals every week; relating to knowledge acquisition, focusing on clinical judgment, and pertaining to ethical issues (Price et al., 2013) to help students understand the importance of the clinical experience. Teaching strategies such as goal setting activities and how to correctly perform self-reflection can help learners to have a meaningful clinical experience and contribute to clinical growth.

Although literature supports motivation as an integral factor to facilitate growth and development, there are additional influences that may contribute more variance to clinical growth. Future research employing qualitative and quantitative methods is warranted. Specific evidence-based strategies could be identified which assist students to be successful.

Implications for Educational Practice

This study established an assessment process with a valid and reliable instrument which can be used for student assessment to better understand the components of student motivation that may contribute to clinical growth. As the traditional clinical learning environment continues to increase in complexity and remains unpredictable, there is a need for educators to provide clear expectations and assessment criteria to promote an optimal environment for clinical growth. Establishing an acceptable level of interrater reliability with all clinical educators before assessing students was challenging and time consuming,

however, it enhanced reliability and minimized bias that threatened validity when using the CCEI. Taking the time to train clinical educators on the use of an instrument for assessment and to establish consistency in expectations, helped to address the issue of subjectivity and educator bias. Training the students to use the instrument for assessment, promoted a fair and consistent process with a valid and reliable instrument.

The findings from this study revealed a discrepancy between student and educator change scores, with assessments that were not closely aligned. Using the CCEI for assessment by both educators and students with the same established criteria creates an opportunity to promote communication between the educator and student when there is a difference in the assessment scores. Although this type of communication between educators and students was not implemented as part of the study, it is possible to consider future interventions to address this concern. If an educator and student used the CCEI for assessment, there would be a starting point for discussion with specific, previously establish criteria.

Assessment of motivation would allow educators to alter instructional activities to include reflection, goal setting, or other assignments to promote aspects of motivation, such as the task value or intrinsic goal orientation. Future research in this area would allow educators to facilitate clinical growth and student success.

Limitations

There were several limitations in this study. One limitation included a sample recruitment from three schools of nursing. Additionally, although it was necessary to reach adequate power, collecting data over two different semesters was a study limitation that

could have increased the sampling bias and motivation scores could have been influenced by this difference.

Another limitation was the use of a convenience sample of traditional 8-semester BSN students, preassigned to clinical groups which may have resulted in selection bias. However, deliberate multi-school sampling was used to improve the generalizability of the findings. Additionally, potential confounding variables of clinical courses occurring simultaneously, prior experience in health care, and relationships between students and educators were a study limitation which were unable to be controlled. The study design did not include blinding, however, specific information related to scores on the CCEI and MSLQ was withheld from the educators and students to prevent unintentional changes in behavior. Finally, the CCEI was used by students for self-assessment. To address this, the same scoring directions and criteria were provided to both educators and students, resulting in acceptable reliability coefficients.

Conclusion

As the traditional clinical learning environment continues to increase in complexity and remains unpredictable, there is a need for educators to provide clear expectations and assessment criteria to promote an optimal environment for clinical growth. There are several implications from the findings of this study which are particularly relevant for educators. Establishing an acceptable level of interrater reliability with all clinical educators before assessing students is challenging and time consuming, however, it enhanced reliability and minimized bias that threatened validity when using the CCEI. This is an important consideration for all student assessment in clinical settings. Furthermore, if instructors incorporate specific evidence-based instructional activities that

promote aspects of student motivation, better clinical competency could be identified.

Future research in this area could revolutionize clinical education and promote student

success.

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Figure 1: Model of Clinical Growth

Antecedents

Quality Educator

Supportive Environment

Intrinsic Student Characteristics

Attributes

Higher-level Thinking

Socialization

Linking Theory to Practice

Skill Development

Clinical Growth

Interpersonal Communication

Self-Reflection

Self-Investment

Consequences

Lifelong Learning

Transition towards Autonomy

Personal Growth

Competency

Confidence

(Barkimer, 2016)

Table 1: Multiple Regression with Value and Expectancy Subcomponents Predicting Student Change Scores ($N = 72$) and Model Summary

Predictor	B^a	t
Intrinsic goal orientation	.257	1.526
Extrinsic goal orientation	.034	.249
Task value	-.436	-2.575[b]
Control of learning	.067	.480
Self-efficacy	.030	.171
R	R Square	Adjusted R Square
.315	.099	.031

[a] standardized
[b] $p < .05$

Table 2: Multiple Regression with Value and Expectancy Subcomponent Predicting
Educator Change Scores ($N= 72$) and Model Summary

Predictor	B[a]	t
Intrinsic goal orientation	.383	2.343[b]
Extrinsic goal orientation	.206	1.576
Task value	-.342	-2.085[b]
Control of learning	.174	1.298
Self-efficacy	-.207	-1.241
R	R Square	Adjusted R Square
.396	.157[b]	.093

[a] standardized
[b] $p < .05$

Addendum

Chapters I, II, and III of this dissertation provide an introduction, review of the literature, and research design and methods for the current study. The manuscript option for dissertation was selected, therefore, the results and discussion included in chapters IV and V will be submitted for publication. Additional information is included in this addendum regarding the significance of the overall study findings for the following: intrinsic goal orientation, task value, extrinsic goal orientation, control of learning beliefs, self-efficacy for learning, and the Model of Clinical Growth.

Significance of Intrinsic Goal Orientation Findings

The results from the exploratory analysis using multiple regression indicated that intrinsic goal orientation made a statistically significant contribution to the educator change score. These findings indicate that if an educator has the opportunity to understand a student's intrinsic goal orientation motivation scores at the beginning of the clinical rotation, clinical growth may be able to be predicted. Therefore, if a student identifies with low intrinsic goal orientation scores on the MSLQ, an educator can select specific teaching and learning strategies can be used to increase motivation in this area and facilitate student success and clinical growth.

There are teaching and learning strategies that can be used by clinical educators to address intrinsic goal orientation; self-reflection, self-monitoring, and goal-setting. A student with low intrinsic goal orientation scores may benefit from guided self-reflection. Self-reflection is a strategy that allows a person to consider feelings, beliefs, and actions from an event which can lead to changing behavior. Self-reflection is a strategy that can be used by a student to assist in choices and actions in the future (Johnson, 2013). A clinical educator could guide a student with low intrinsic goal orientation scores to use

self-reflection to consider how information learned in the traditional clinical setting might be useful in nursing practice. A student who engages in self-reflection may gain an appreciation for the learning opportunity in the traditional clinical learning environment and motivation scores of intrinsic goal orientation may increase.

Self-monitoring is another teaching and learning strategy that can be taught to increase intrinsic goal orientation scores in students. Self-monitoring includes a student's deliberate attention to a behavior used to achieve goals and can be used for improvement in learning (Schunk, 1990). A student with low intrinsic goal orientation scores may be guided to use this strategy to determine progress in the content or in meeting the expectations in the traditional clinical setting. Self-monitoring allows a student to be self-directed in learning and may be a useful strategy for increasing intrinsic goal orientation scores.

Goal-setting is a third teaching and learning strategy that could be taught to students to improve intrinsic goal orientation scores. When students participate in setting goals within the traditional clinical learning environment, they have the opportunity to focus and guide their clinical experience, identify areas for improvement, optimize learning opportunities, and enhance their engagement (Price et al., 2013). These three teaching and learning strategies could help improve intrinsic goal orientation scores, however, further research is needed to determine if they are the best interventions to use to address intrinsic goal orientation in nursing students in the traditional clinical learning environment.

Significance of Task Value Findings

The results from the exploratory analysis using multiple regression indicated that the predictor task value made a statistically significant contribution to both the student

and educator change scores. Similarly to the intrinsic goal orientation findings, if an educator has the opportunity to understand how the student values the learning or task in the traditional clinical learning environment at the beginning of the clinical rotation, clinical growth may be able to be predicted. Therefore, if a student identifies with low task value scores on the MSLQ, an educator can select specific teaching and learning strategies can be used to increase motivation in this area and facilitate student success and clinical growth.

Intrinsic goal orientation considers the reasons why a student may participate in learning, however, the task value involves the student's perception of importance, interest, or utility of the learning or task (Pintrich et al., 1991). These two subcomponents of motivation are different, yet an educator may use similar teaching and learning strategies to help students with low task value scores. An educator can guide students to participate in self-reflection, focusing on the importance and utility of the information learned in the traditional clinical learning environment on future practice. If a student is able to make a connection between the current information learned in the clinical setting and a future setting, they may have a better understanding of the importance of the learning experience.

Furthermore, if a student has low task value scores on the MSLQ, an educator has the opportunity to help them by using a thinking out loud approach where thoughts, decisions, and actions are described in detail while in context. Through this thinking outload approach, the clinical educator can assist the student in understanding the importance or utility of the information learned when providing patient care in future situations.

Interestingly, the multiple regression findings using exploratory analysis included negative *t* values for the task value predictor for both student and educator change scores. These findings indicate that students with low task value self-evaluated and were evaluated by clinical educators as having the most clinical growth. This was thought to occur because students who began the clinical rotation with high task value scores were interested in the content or understood the importance of the learning opportunity and may have prepared and performed well from the beginning. Therefore, students with high task value scores on the MSLQ did not experience as much increase in the educator or student change scores.

An educator who is aware of student motivation scores at the beginning of the clinical rotation has an opportunity to implement teaching and learning strategies that could allow a student to enhance motivation in identified areas of need, such as intrinsic goal orientation or task value. Furthermore, if an educator elects to alter teaching and learning strategies in the traditional clinical setting, there is an opportunity for students to use self-regulatory strategies that can be selected to assist in area of low motivation. In this situation, the student would be responsible to select strategies such as goal setting, reflection, positive self-talk, self-monitoring, help seeking, self-testing and self-evaluation to enhance areas of low motivation.

Significance of Extrinsic Goal Orientation Findings

Extrinsic goal orientation involves a person who perceives him/herself to be engaging in an activity for reasons such as receiving a grade, reward, or comparing performance to others (Pintrich et al., 1991). The results from the exploratory analysis using multiple regression indicated that the predictor extrinsic goal orientation did not

make a statistically significant contribution to the student and educator change scores.

Therefore, the 7th and 8th semester nursing students who participated in this study, did not

perceive themselves as engaging in learning as the means to an end.

Extrinsic motivation is essential to understand because some students will express

this motivational orientation in the clinical setting. Educators need to be familiar with

self-regulatory strategies that are available for students who display an external goal

orientation for motivation. External rewards can be useful if a student finds the learning

uninteresting or difficult. One self-regulatory strategy that an educator could offer to

students includes self-assessment of learning in conjunction with educator assessments on

a routine basis with an assessment tool such as the CCEI. Educators could provide timely

feedback throughout the clinical rotation which allows a student to monitor his/her

performance and to continue to work towards achieving the highest mark, which may be

a motivating factor. Although, the findings from this study showed that extrinsic goal

orientation did not make a statistically significant contribution to the student and educator

change scores, it is important for educators to understand how to facilitate learning in

those students who display extrinsic goal orientation tendencies.

Significance of Control of Learning Beliefs Findings

The results from the exploratory analysis using multiple regression indicated that

the predictor, control of learning beliefs, did not make a statistically significant contribution

to either student or faculty changes scores in the current study. The control of learning

beliefs includes a student's belief that the effort placed towards learning will results in a

positive outcome (Pintritch et al., 1991). It is not surprising that the control of learning

beliefs did not make a contribution to either change score because of the external factors

that are involved in the traditional clinical learning environment. The student may not have the ability to regulate variables that contribute to clinical education; the educator, the staff nurses, the clinical setting, and the patient population which can leave a student feeling a loss of control in relation to academic performance.

Educators may encounter students who express a motivational orientation to control of learning beliefs. There are strategies that can be selected to assist a student with this motivational orientation. For example, pre-conference discussion before providing direct patient care provides an opportunity for a student to describe an approach to provide care for a patient and have the opportunity for a classmate or the educator to evaluate the plan of care. This strategy allows students to put effort into the learning through thoughtful contributions in discussion of the plan of care with peers and educators. Although the control of learning beliefs predictor did not make a statistically significant contribution to the educator or student change scores, it is important for an educator to understand strategies that can be used for students who express this motivational orientation.

Significance of Self-efficacy for Learning Findings

The results from the exploratory analysis using multiple regression indicated that the predictor, self-efficacy for learning, did not make a statistically significant contribution to the student and faculty change scores. Self-efficacy for learning embodies the student's performance expectations and the self-appraisal of the ability to master a skill (Pintritch et al., 1991). Self-efficacy for learning did not contribute to the students' clinical growth in this study possibly because the students did not have the confidence in performing tasks specific to the traditional clinical site.

Strategies to encourage self-efficacy for learning are important for educators to understand to promote a student's confidence and to guide the student to think like a nurse in the traditional clinical learning environment. Educators can create patient scenarios similar to situations with the expected patient population to provide students with an opportunity to practice thinking like a nurse before providing direct patient care. Contextual scenarios allow a student to analyze the information available and practice thinking through actions before an encounter with a patient in a similar situation. Educators can provide feedback on the steps of thinking like a nurse which can promote a student's confidence and encourage self-efficacy. Self-efficacy for learning is important to enhance motivation in the clinical learning environment and although there are specific strategies that an educator can elect to use with students, the clinical learning environment, specifically the quality of the educator and the nurses, also contribute to a student's motivation (Arkan et al., 2018).

The Model of Clinical Growth and Dissertation Study Findings

The Model of Clinical Growth includes intrinsic student characteristics which encompasses motivation, however, there are additional antecedents and outcomes to consider in future research (Barkimer, 2016). The two open-ended questions used in this study provided students with an opportunity to express thoughts on contributions to clinical growth. The short answer responses from the first question, "What do you think contributed most to your clinical growth in this course?" indicated a need for hands on learning, which is one aspect of the attribute, skill development, within the Model of Clinical Growth. Additionally, the responses from the first question indicated a need for the ability to work closely with nurses who were encouraging, understanding, and willing to teach, which relate to the antecedent from the Model of Clinical Growth, supportive

environment. Finally, several responses from the first open-ended question specified the need for a variety of experiences. A quality educator, an antecedent from the Model of Clinical Growth, can contribute to the ability to provide students with a variety of experiences while in the traditional clinical learning environment.

A second open-ended question was included in this dissertation study, "What do you think contributes most to a student's clinical growth overall?" and yielded interesting responses. There was some overlap in the responses between questions as students indicated a desire for a positive work culture, which was similar to the supportive environment from the first question, however there were differences noted. The two most common responses to this question after a positive work culture, included a desire for clinical educator and staff feedback and for intrinsic motivation, to want to do well. Students have a desire to receive feedback regarding performance in the clinical setting. The findings from this dissertation study support the CCEI as valid and reliable assessment tool for the included setting and population. This instrument could be used to provide students with the feedback they desire. Future research could include testing the CCEI in populations, such as associate or accelerated degree nursing students.

Finally, student participants responded that "intrinsic motivation, to want to do well", contributed to a student's clinical growth overall. This finding is interesting as it supports the need for future research in this area. Students want to have the desire, or to want to do well, but may not always have high motivation in this particular area. It is the responsibility of the educator to facilitate learning and to promote clinical growth. There are several teaching and learning strategies that can be put in place to enhance intrinsic goal orientation such as self-reflection, self-monitoring, and goal-setting, which allow

nursing students to achieve the intrinsic motivation that they believe contributes most to a

student's clinical growth overall.

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APPENDICES

Appendix A: Creighton Competency Evaluation Instrument

Instrument can be retrieved at https://nursing.creighton.edu/academics/competency-evaluation-instrument after agreeing to terms of use.

(Hayden, et al., 2014a; Hayden, et al., 2014b)

Appendix B: Motivated Strategies for Learning Questionnaire

Instrument can be retrieved from the following citation:

Pintrich, P., Smith, D., Garcia, T., & McKeachie, W. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ).* Ann Arbor.

Appendix C: Permission Granted: Model of Clinical Growth

Appendix D: Permission Granted: CCEI

Agreement for use of the Creighton Competency Evaluation Instrument (C-CEI©)

I understand that I have been granted permission by the creators of the C-CEI© to use the

C-CEI© for academic and/or research purposes.

I confirm that I will complete the required training prior to use of the C-CEI©. In addition, I agree that all individuals working

with the C-CEI© will also complete the required training prior to using the instrument.

I agree that I will use the C-CEI© only for its intended use, and will not alter the C-CEI© in any way.

I understand that I may be asked to share results on any validity or reliability data as determined with the creators of the

C-CEI©.

Appendix E: Pilot Study: Evaluation of Nursing Students in the Traditional Clinical Learning Environment

A pilot study was conducted to understand potential challenges of using the Creighton Competency Evaluation instrument (CCEI) and the methodology including 1) determining training sessions needed for using the instrument successfully; 2) determining sufficient variability and sensitivity of data; and 3) determining feasibility of using the CCEI as a data collection tool from the perspective of both the educator and the nursing student. In accordance with protection of human subjects, the study involved evaluation of normal education practices that take place in an educational institution, therefore, it qualified for exempt status (Marquette University, 2016).

The pilot study included a structured training session, conducted by the researcher, for the one educator participant that included an overview of the study, CCEI training videos, data collection instruments, logistics of the data collection, creation of criteria for the discussion worksheet that related to the CCEI, and a follow-up discussion session after the first day using the CCEI. During the overview of the pilot study, the researcher reviewed the following: the purpose of the study, the student's role, the researcher's role as a rater and researcher, and the educator's role as a rater in the study. One of these raters was a clinical educator for the students and the other was the researcher. Following the overview of the study, the raters watched training videos on how to use the CCEI located on the Creighton University website. Upon completion of these training videos, an in-depth review of the data collection instruments occurred. Review of the CCEI included discussion of the use of a unique identification number replacing the student name, review of each scoring option, review of each item on the instrument, calculation of an earned score, and the purpose of the comment section. The

student demographic and educator demographic sheets were also reviewed and the researcher provided an opportunity for the other rater to ask questions on any of the data collection instruments before discussing how data collection would occur with the nursing students. The logistics of nursing student data collection were discussed, preparing for the three days of the study including the introduction, the first use of the CCEI, and the final use of the CCEI for each group of nursing students. After discussion of the data collection process was completed, the training session concluded with the creation of criteria for the blank discussion worksheet that related to the CCEI.

Creating criteria using the blank discussion worksheet template was an iterative process between the researcher and the clinical educator rater which began during the training session and ended before the start of the pilot study. Each of the 23 items on the CCEI needed further definition and explanation for the context of the traditional clinical learning environment, specifically at the selected hospital. The researcher and the clinical educator rater used the blank discussion worksheet to create specific criteria for each item on the CCEI, considering the level of the nursing students in their program of study and the expected behaviors from the hospital while interacting with patients and families. The completed discussion worksheet included several expected behaviors for each item; however, it was acknowledged that it was not an exhaustive list. This completed document was used as a guide for the researcher, the clinical educator, and the nursing students during each data collection time to enhance consistency of scoring the CCEI. Upon completion of the training session, discussion occurred between the two raters regarding any outstanding questions.

Inter-rater reliability was established after the educator training session by scoring one nursing student in the traditional clinical setting using the CCEI during a two-hour observation by both raters. Both the clinical educator and researcher independently rated the student using the CCEI during the same period of time. For each of the 23 items on the CCEI, the raters selected one of the three categorical variables; 0 = does not demonstrate competency, 1= demonstrates competency, and NA = not applicable. To assess the reliability and consistency of the scores, the percentage of agreement was calculated. The two raters were in agreement a total of 19 out of 23 times, 82.6%. To ensure that these this level of agreement did not occur by chance, Cohen's kappa coefficient (Cohen's K) was calculated, taking into consideration the observed proportion of agreement and correcting for the chance level of agreement (Warner, 2013). Landis and Koch (1977) suggested the following guidelines when interpreting Cohen's K: .21 to .40 indicates fair reliability; .41 to .60 indicates moderate reliability, .61 to.80 indicates substantial reliability; and .81 to 1.00 indicates almost perfect reliability. Cohen's kappa coefficient of .67 from the pilot study indicated substantial reliability after the educator was trained to use the CCEI instrument. After establishing inter-rater agreement, discussion of the differences in scoring the CCEI occurred.

Data collection for the pilot study began on the first day of the clinical rotation for each group. The researcher introduced the study and the CCEI to the potential nursing student participants and provided an opportunity to address any questions. All interested nursing students were assigned a random number that was used on all subsequent data collection instruments. During the introduction to the study, the student demographic forms were distributed and the researcher collected all completed forms.

Upon completion of the first day that nursing students provided patient care in the hospital and after post-conference discussion, nursing students, the clinical educator, and the researcher each completed the CCEI. A brief review of the CCEI and the discussion worksheet occurred before completion of the instrument. Nursing students, the clinical educator, and the researcher used the completed discussion worksheet as a reference for each item on the CCEI instrument. The researcher collected the completed student instruments while the educator left the room.

The researcher, clinical educator, and nursing students used the CCEI a second time during the pilot study for both groups on the last day direct patient care was provided, to rate the nursing students after post-conference discussion occurred. Nursing students, the clinical educator, and the researcher used the completed discussion sheet as a reference again when completing the CCEI the second time. The researcher collected all CCEI documents after the second assessment for each group in the pilot study and entered the data into the latest version of SPSS to begin data analysis.

The results from the pilot study included a description of the nursing student's demographic information, the clinical educator and researcher demographic information, descriptive statistics on categorical and continuous variables, Pearson product-moment correlations, paired sample t-tests, reliability, feasibility, and future considerations. The findings were used to determine if the data was sufficient in variability and sensitivity and to determine if this instrument was feasible to use in the current research study.

The pilot study included 16 nursing students from a private university in the Midwest (100% participation rate) ranging in age from 21 to 23, with a mean of 21.50 years and a standard deviation of .73. Of the nursing students, 100% were female and did

not have a previous college degree (n= 16), 87.5% identified as Caucasian (n= 14),

12.5% identified as Hispanic and Latino (n= 2) and 93.8% had not taken a leave of

absence from the nursing program for a semester or longer (n= 15) and 6.3% had taken a

leave of absence from the nursing program for a semester or longer (n= 1). Furthermore,

93.8% of the nursing students identified English as the primary language spoken (n= 15)

and 6.3% identified that English was not the primary language spoken (n= 1).

The pilot study included the researcher and one clinical educator as raters ranging

in age from 37 to 60 years in age. Both raters were female, Caucasian, and identified the

highest degree obtained in the field of nursing as Master's Degree in Nursing ($n = 2$). One

reported having a full-time teaching position and one had a part-time teaching position.

The number of years teaching nursing students and teaching as a clinical educator ranged

from 11 years to 16 years and the number of years teaching on the selected unit ranged

from 4 years to 11 years.

Testing assumptions for the selected statistical tests revealed interesting findings

regarding the items on the CCEI. Items number 1 "obtains pertinent data" and number 8

"promotes professionalism" on the CCEI indicated that 100% of the nursing students

demonstrated competency consistently by both clinical educator/researcher and nursing

students at the beginning and end of the clinical rotation. This finding indicates that both

types of raters felt that the students accurately obtained pertinent data and promote

professionalism during every interaction on the two days of assessment. It is possible

that the behaviors of professionalism and the skill of collecting obtaining pertinent

information had been integrated throughout the curriculum at the pilot school and the

nursing students had a solid foundation of these expectations.

There were several items on the CEEI that revealed different scoring between the clinical educator/researcher raters and the nursing student's self-rating, despite the fact that all participants used the discussion worksheet with pre-established criteria. For example, item number 18 on the CCEI, "uses patient identifiers" was rated by the nursing students as completing this skill 100% of the time when required, during both administrations of the CCEI, however the clinical educator/researcher observed the nursing students consistently using patient identifiers only 18.8% of the time during the first CCEI use and 62.5% during the second administration of the CCEI. Similarly, at the beginning of the clinical rotation, the clinical educator and the researcher noted that there were 0% of the nursing students who consistently documented the findings clearly, concisely, and accurately (item 6 on the CCEI), however the nursing student's scored themselves as consistently performing this skill 68.8% of the time.

On the other hand, there were other items where the clinical educator/researcher felt nursing students consistently demonstrated a skill, however the nursing students did not agree with this observation. For example, the clinical educator/researcher observed nursing students reflecting on clinical experience (item 16) and interpreting vital signs (item 9) on almost every occasion, 100% or 93.8% of the time for both these skills, while nursing students scored themselves lower in these areas ranging from 81.3% to 93.8%. It is possible that the nursing students did not recognize that they were performing these behaviors when completing the CCEI at the beginning and end of the clinical rotation. It is also possible that the clinical educator/researcher believed that reflection on the clinical experience and interpretation of vital signs was occurring based on observed nursing

student behaviors, when in fact the nursing student was not actually performing these behaviors.

It was also apparent that nursing students do not have the opportunity to delegate appropriately (item 17) in the traditional clinical setting. During the days when the CCEI was administered, the clinical educator/researcher noted that 93.8% of the time, this skill was not available to the nursing students. It was observed that nursing students did not delegate skills to certified nursing assistants or care partners, but instead performed the skills that these team members would normally perform such as hanging tube feedings, completing vital signs, and weighing patients. It is likely that nursing students wanted to perform the psychomotor skills for their patients and perhaps did not recognize the importance of delegation. It is also possible that there is an understanding of nursing student expectations between the unit where the pilot study took place and the school of nursing that encouraged nursing students to provide total patient care, deterring the action of delegation. Considering the importance of delegation in the nursing profession, this is a skill that could be written into a simulation scenario, so that nursing students practice and develop this skill before graduating.

The distribution of scores was inspected with histograms revealing a reasonable normal distribution considering the limited sample size for the following continuous variables; educator/researcher CCEI earned score Time 1 and Time 2, student CCEI earned score Time 1 and Time 2, clinical educator/researcher change scores and nursing student change scores. The Normal Q-Q Plots for each continuous variable presented as a reasonably straight line, suggesting normal distribution. Normality was also assessed with the Kolmogorov-Smirnov statistic for each continuous variable and all variables

included non-significant results, >.05 indicating normality except for

"educator/researcher CCEI earned score Time 2" which had a significant result of .02.

Therefore, parametric testing was used with these continuous variables. The pilot study

CCEI scores are available in Table 1, displaying the range of scores, the mean, and the

standard deviation for both students and clinical educator/researcher during the beginning

of the clinical rotation (Time 1) and at the end of the clinical rotation (Time 2) as well as

the nursing student and clinical educator change scores.

Table 1: Pilot Study: CCEI Scores

	Range of Scores	Mean	Standard Deviation
Educator/Researcher Time 1	.59 to .91	.78	.10
Nursing Student Time 1	.59 to 1.00	.86	.11
Educator/Researcher Time 2	.59 to 1.00	.88	.13
Nursing Student Time 2	.82 to 1.00	.92	.07
Educator/Researcher Change Score	-.31 to .36	.10	.18
Nursing Student Change Score	-.05 to .32	.05	.09

Three relationships were analyzed using Pearson product-moment correlations:

clinical educator/researcher and nursing student CCEI scores at the beginning of the

clinical rotation, clinical educator/researcher and nursing student scores at the end of the

rotation, and clinical educator/researcher and nursing student change scores. The

relationship between the clinical educator/researcher CCEI and nursing student CCEI

score Time 1 was a nonsignificant small, positive correlation, $r = .11$, $n = 16$, $p = .68$ with

levels of self-perceived competency associated with similar levels of clinical educator

observed competency (Cohen, 1988). The relationship between the clinical

educator/researcher and the nursing student CCEI total score Time 2 was a nonsignificant small, positive correlation, $r = .25$, $n = 16$, $p = .35$ with levels of self-perceived competency associated with similar levels of clinical educator/researcher observed competency (Cohen, 1988). The findings from both the beginning and end of the clinical rotation scores indicate that there is a relationship with the small number of nursing students who accurately perform self-assessment in comparison to the clinical educator/researcher assessment when provided the same criteria.

The relationship between clinical educator/researcher and nursing student change scores was a nonsignificant medium, negative correlation, $r = -.29$, $n = 16$, $p = .27$ with higher clinical educator/researcher change scores associated with lower nursing student change scores (Cohen, 1988). This expected finding indicates that there was a much greater change in the clinical educator/researcher CCEI scores from the beginning to the end of the clinical rotation than there was for the nursing student. It is possible that the clinical educator and researcher perceive nursing students as learners who need the provided time of the clinical rotation to grow and develop in the traditional clinical learning environment, while nursing students may perceive themselves as experienced in several areas at this point in their learning trajectory, which may account for the negative correlation.

A paired-sample *t*-test was conducted to determine if there was a change in scores on the CCEI when completed by clinical educator/researcher at the beginning of the clinical rotation to the end of the clinical rotation. There was a statistically significant difference at the alpha level .05 on the CCEI when completed by the clinical educator/researcher from Time 1 ($M = .78$, $SD = .10$) to Time 2 ($M = .88$, $SD = .13$; $t(15)$

= -2.16, *p* = .05, two-tailed). The mean increase in the clinical educator/researcher CCEI

scores was .10 with a 95% confidence interval ranging from -.19 to -.001. The calculated

Cohen's effect size index (1992), *d* = -.54 indicated a medium effect size.

A second paired-sample *t*-test was conducted to determine if there was a change

in score on the CCEI when completed by nursing students at the beginning of the clinical

rotation to the end of the clinical rotation. There was a statistically significant difference

at the alpha level .05 on the CCEI when completed by nursing students from Time 1 (*M* =

.86, *SD* = .11) to Time 2 (*M* = .92, *SD*= .07; *t*(15) = -2.40, *p* = .03, two-tailed). The mean

increase in the nursing student CCEI scores was .05 with a 95% confidence interval

ranging from -.10 to -.01. The calculated Cohen's effect size index (1992), *d* = -.60

indicated a medium effect size.

Additional paired-samples *t*-tests were conducted using the subscales of the CCEI

when completed by clinical educator/researcher to evaluate the Model of Clinical

Growth. All four subscales; assessment, communication, clinical judgment, and patient

safety demonstrated an increase in the mean score from Time 1 to Time 2 (Table 2).

There was a statistically significant increase in the communication subscale from Time 1

(*M* = 3.13, *SD* = .72) to Time 2 (*M* = 3.81, *SD* = .66), *t* (15) = -3.47, *p* < .05 (two-tailed).

The mean increase in the communication subscale scores was -.69 with a 95% confidence

interval ranging from -1.11 to -.27. The calculated Cohen's effect size index (1992), *d* = -

.87 indicated a large effect size. A more conservative alpha level, .0125 was selected

using the Bonferroni adjustment since four additional paired-sample t-tests were selected

to analyze the subscales of the CCEI. This strict alpha level was selected to protect

against Type 1 errors (Warner, 2013).

Table 2: Pilot Study: CCEI Subscales Paired-samples *t*-test

	Educator/Researcher Time 1 Mean	Educator/Researcher Time 2 Mean	Sig. (2 tailed)
Assessment	2.25	2.50	.22
Communication	3.13	3.81	.003*
Clinical Judgment	5.81	5.94	.86
Patient Safety	3.31	4.25	.09

*p≤.0125

The findings from the nursing student and the clinical educator/researcher paired-samples *t*-tests demonstrated statistical significance on the overall CCEI scores from the beginning to the end of the clinical rotation. The findings from the CCEI subscales: assessment, communication, clinical judgment, and patient safety all indicated an increase from the beginning to the end of the clinical rotation, however only the communication subscale was statistically significant. These findings support the inclusion of the attributes from the Model of Clinical Growth, which are embedded in the CCEI and are required to achieve clinical competency. The significant changes in scores from the beginning to the end of the rotation show that nursing students develop clinical competency in the traditional clinical learning environment. There may have also been a change in the attributes of clinical growth such as socialization, skill development, self-reflection, self-investment, interpersonal communication, linking theory to practice, and higher-level thinking (Barkimer, 2016) although these were not tested. Therefore, future research that tests these aspects of clinical growth while in the traditional clinical learning environment is warranted. These findings also support the use of the CCEI as an assessment instrument for measuring clinical competency in nursing students.

Cronbach's alpha was attempted with statistical consultation, to assess the homogeneity of responses across the items on the CCEI (Warner, 2013). One of the three options on the CCEI is "not applicable," which was treated as missing data. Missing data was problematic in the pilot study and caused a very small sample size that resulted in the inability to calculate this coefficient. It was determined that the sample size in the pilot study was the limiting factor to calculation of the Cronbach's alpha reliability coefficient. Cronbach's alpha reliability coefficient may be able to be reported with a larger sample size although the not applicable selection on the CCEI will still be utilized. Cronbach's alpha for inter-rater reliability has been calculated in other studies that used the CCEI. One study had participants watch three recorded videos of students performing skills below, at, and above expectations with Cronbach's alpha reliability coefficients acceptable for all three scenarios (.974, .975, and .979) (Hayden, et al., 2014a). Kappa scores suggest fair to moderate agreement ranging from .316 to .453 for the three scenarios (Hayden, et al., 2014a). The findings from the pilot study allowed the researcher to determine feasibility of using the CCEI from the perspective of both the student and educator, examine variability and sensitivity of the instrument, and to decide if the training session was adequate.

Appendix F: MSLQ Components and Subcomponents

Value Component: Intrinsic Goal Orientation, Extrinsic Goal Orientation, and Task Value

Intrinsic Goal Orientation Subcomponent: Item #1, 13, 18, & 20
1. In a class like this, I prefer course material that really challenges me so I can learn new things.
13. In a class like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.
18. The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.
20. When I have the opportunity in this class, I choose course assignments that I can learn from even if they don't guarantee a good grade.

Extrinsic Goal Orientation Subcomponent: Item #6, 9, 11, & 25
6. Getting a good grade in this class is the most satisfying thing for me right now.
9. The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.
11. If I can, I want to get better grades in this class than most of the other students.
25. I want to do well in this class because it is important to show my ability to my family, friends, employer, or others.

Task Value Subcomponent: Item #3, 8, 14, 19, 22, & 23
3. I think I will be able to use what I learn in this course in other courses.
8. It is important for me to learn the course material in this class.
14. I am very interested in the content area of this course.
19. I think the course material in this class is useful for me to learn.
22. I like the subject matter of this course.
23. Understanding the subject matter of this course is very important to me.

Expectancy Component: Control of Learning Beliefs and Self-efficacy

Control of Learning Beliefs Subcomponent: Item #2, 7, 15, & 21
2. If I study in appropriate ways, then I will be able to learn the material in this course.
7. It is my own fault if I don't learn the material in this course.
15. If I try hard enough, then I will understand the course material.
21. If I don't understand the course material, it is because I didn't try hard enough.

Self-efficacy Subcomponent: Item #4, 5, 10, 12, 16, 17, 24, & 26
4. I believe I will receive an excellent grade in this class.
5. I'm certain I can understand the most difficult material presented in the readings for this course.
10. I'm confident I can learn the basic concepts taught in this course.
12. I'm confident I can understand the most complex material presented by the instructor in this course.
16. I'm confident I can do an excellent job on the assignment and tests in this course.
17. I expect to do well in this class.
24. I'm certain I can master the skills being taught in this class.
26. Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.

(Pintrich et al., 1991)

Appendix G: IRB Letter of Approval

MARQUETTE
UNIVERSITY
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Office of Research Compliance

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Date: January 4, 2017
IRB Protocol#: HR-3274
Principal Investigator: Jessica Barkimer
Faculty Advisor: Marilyn Frenn, PhD
Department: Nursing
Study Title: *Pilot Study: Evaluation of Nursing Students in the Traditional Clinical Learning Environment*

	New Study Approval
☒	This protocol has been determined to be Exempt under category **[1 & 2]** as governed by 45 CFR 46.101(b).
☐	This protocol has been approved as minimal risk under Expedited category **[#]** as governed by 45 CFR 46.110.
☐	This protocol has been reviewed by the Institutional Review Board on [date] and approved as:
	☐ Minimal risk
	☐ Greater than minimal risk

	Approval Date
☒	This exempt determination was made on [01/04/2017].
☐	This study was approved on [date] for a period of twelve months. This IRB approval will expire on [date]. Please submit a continuing review application if approval is requested beyond this date.

	Consent
☒	Please use the final version of the exempt information sheet or consent form submitted to the IRB. Contact the IRB office if you have questions about which document you should be using.
☐	The IRB approved informed consent form is attached. Use the stamped copies of this form when enrolling research participants. Each research participant should receive a copy of the consent form.
☐	This study has been approved for waiver of documentation of consent under 45 CFR 46.117(c)(1) or (2). Please use the approved consent information sheet with your participants.
☐	This study has been approved for alteration or waiving of consent under 45 CFR 46.116(d).

	Study specific notifications
☐	The IRB approved recruitment materials are enclosed with this letter. Use stamped copies of these documents for recruitment purposes.
☐	This study involves students collecting data through surveys- please review the MU Questionnaire/Survey Procedures: http://www.marquette.edu/osd/policies/survey_procedure.shtml
☐	This study involves recruitment emails for online surveys to be sent to 100 or more Marquette students, faculty or staff. Please review the website of the Online Survey Review Group: http://www.marquette.edu/onlinesurveys/

MARQUETTE
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Office of Research Compliance

Schroeder Complex, 102
P.O. Box 1881
Milwaukee, Wisconsin 53201-1881

P 414.288.7570
F 414.288.6281
W marquette.edu/researchcompliance

☐ This protocol involves the use of electrical or mechanical systems that require direct human contact. Electrical and mechanical safety inspections should be conducted per Marquette University Human Research Protection Equipment and Electrical Safety Testing Policy 98.106.

HIPAA

☐ This study involves accessing PHI from a HIPAA covered entity. The IRB has granted approval to access the following protected health information for the purpose of this study:
   - N/A

☐ A HIPAA Authorization form has been approved and should be used to with study subjects.

☐ A waiver of authorization has been approved for this study.

All changes to this protocol must be reviewed and approved by the IRB before being initiated, except when necessary to eliminate apparent immediate hazards to the human subjects. If the study is exempt, please email the requested changes to orc@marquette.edu. If the study is not- exempt, please submit personnel changes using the personnel amendment form or any other changes using the amendment submission form.

If there are any adverse events or deviations from the approved protocol, please notify the Marquette University IRB immediately.

An IRB Final Report Form must be submitted once this research project is complete. The form should be submitted in a timely fashion, and must be received no later than the protocol expiration date.

The principal investigator is also responsible for ensuring that all non-Marquette study staff receive appropriate training in the ethical guidelines of conducting human subjects research.

Please contact the Office of Research Compliance with any further questions. Thank you for your cooperation and best wishes for a successful project.

Sincerely,

Benjamin Kennedy
Research Compliance Officer-Human Subjects & Radiation Safety

Tue 9/12/2017 2:32 PM

Kennedy, Ben <benjamin.kennedy@marquette.edu>

RE: Amendment to HR-3274

To   Barkimer, Jessica

Cc   Frenn, Marilyn

Hi Jessica,

Thanks for the submission. After review of the requested changes, your project will continue to qualify for exempt approval. Thanks and continued success.

Ben

Benjamin Kennedy
Human Subjects and Radiation Safety
Office of Research Compliance
Schroeder Complex, 102
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PO Box 1881
Milwaukee WI 53201
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Tue 9/12/2017 2:32 PM

Kennedy, Ben <benjamin.kennedy@marquette.edu>

RE: Amendment to HR-3274

To   Barkimer, Jessica

Cc   Frenn, Marilyn

Subject: Amendment to HR-3274

Hi Ben,
Attached in this email are the following documents for your consideration as an amendment to HR-3274;

1). Amendment form (pilot study HR-3274)
2). Demographic Information Sheet- Clinical Educator
3). Demographic Information Sheet- Student
4). Exempt Information Sheet- Clinical Educator
5). Exempt Information Sheet- Student
6). MSLQ Instrument
7). Summative Questions- Clinical Educator
8). Summative Questions- Student

I have used track changes on the previous IRB documents including; Demographic Information Sheet-Student, Exempt Information Sheet- Clinical Educator, and Exempt Information Sheet- Student. I also added the following new documents; Demographic Information Sheet- Clinical Educator, MSLQ Instrument, Summative Questions- Clinical Educator and Summative Questions Student.

Appendix H: Clinical Educator Research Information Sheet

MARQUETTE UNIVERSITY RESEARCH INFORMATION SHEET

Evaluation of Clinical Growth and Nursing Student Motivation in the Traditional Clinical Learning Environment

Jessica Barkimer, MSN, RN, CNE

Nursing

You have been asked to participate in a research study. You must be age 18 or older to participate. The purpose of this study is to use the Creighton Competency Evaluation Instrument (CCEI) in the traditional clinical setting to evaluate student competency and to understand the relationship between student motivation and competency using the Motivated Strategies for Learning Questionnaire (MSLQ). The study involves learning how to use the CCEI through a training session, observing nursing students in the traditional clinical setting while completing the CCEI one-page instrument for each student on two occasions (approximately 5-10 minutes to complete for each student) and answering two open-ended questions. You will be asked to answer questions about each student's performance in the clinical setting related to assessment skills, communication, clinical judgment, and the ability to address patient safety. Your responses will be anonymous and kept confidential. The risks associated with this project are minimal. You will be given a $50 gift card at the end of the study. You may not gain anything from participating, except that some people find it valuable to contribute to advancing the science of nursing education through research. The data that you provide will be kept for future research. Your participation is completely voluntary and you may withdraw from the study at any time. You can skip any questions you do not wish to answer. Your decision to participate will not impact your relationship with Marquette University.

If you have any questions about this study, you can contact Jessica Barkimer at 262-347-5409 or jessica.barkimer@marquette.edu. If you have questions or concerns about your rights as a research participant, you can contact Marquette University's Office of Research Compliance at (414) 288-7570.

Thank you for your participation.

Appendix I: Student Research Information Sheet

MARQUETTE UNIVERSITY RESEARCH INFORMATION SHEET

*Evaluation of Clinical Growth and Nursing Student Motivation in the Traditional
Clinical Learning Environment*

Jessica Barkimer, MSN, RN, CNE

Nursing

You have been asked to participate in a research study. You must be age 18 or older to
participate. The purpose of this study is to use the Creighton Competency Evaluation
Instrument (CCEI) in the traditional clinical setting to evaluate student competency and
to understand the relationship between student motivation and competency using the
Motivated Strategies for Learning Questionnaire (MSLQ). The study involves being
observed and rated by your clinical educator/researcher, your completion of the MSLQ
two times where you will be asked questions about your motivation for this clinical
course that will take approximately 10 minutes, your assessment of your own
performance in the clinical setting related to assessment skills, communication, clinical
judgment, and your ability to address patient safety using a one-page instrument (CCEI)
two times that will take approximately 10-15 minutes to complete and answering two
open-ended questions. Your name will be collected in order to ensure the evaluation is
associated with the correct student, however your name will be removed before the data
is entered into the study data set. Your responses will be anonymous and kept
confidential. Your clinical instructor will not see them. The risks associated with this
project are minimal. You will be given a $5 gift card at the end of the study. You may
not gain anything from participating, except that some people find it valuable to consider
these aspects of learning as they engage in clinical experiences. The data that you
provide will be kept for future research. Your participation is completely voluntary and
you may withdraw from the study at any time. You can skip any questions you do not
wish to answer. Your decision to participate will not impact your relationship with
Marquette University and will not impact your relationship with your clinical educator.

If you have any questions about this study, you can contact Jessica Barkimer at 262-347-
5409 or jessica.barkimer@marquette.edu. If you have questions or concerns about your
rights as a research participant, you can contact Marquette University's Office of
Research Compliance at (414) 288-7570.

Thank you for your participation.

Appendix J: Clinical Educator Demographic Questions

Evaluation of Clinical Growth and Nursing Student Motivation in the Traditional Clinical Learning Environment

Clinical Educator Demographic Questions

Directions: Please circle or write in the answer that is most accurate for each of the questions.

1. Please list your age as of today _____

2. Please circle the gender with which you identify 1). Male   2). Female   3). Other

3. Please circle the race(s) with which you identify
    1). Caucasian
    2). African American
    3). Hispanic/Latino
    4). Native American/Alaskan American
    5). Asian American
    6). Native Hawaiian/Pacific Islander
    7). Middle Eastern/North African
    8). Two or more races

4. Please circle the highest degree that you have obtained in the field of nursing
    1). BSN   2). MSN   3) Terminal Degree (PhD or DNP)

5. Please list how many years of experience you have had teaching nursing students_____

6. How many years have you taught as a pediatric clinical instructor _____

7. How many years have you taught on this particular unit _____

8. Please circle your teaching status   1). Full time   2). Part time

Appendix K: Student Demographic Questions

Evaluation of Clinical Growth and Nursing Student Motivation in the Traditional Clinical Learning Environment

Student Demographic Questions

Directions: Please circle or write in the answer that is most accurate for each of the questions.

1. Please list your age as of today _____

2. Please circle the gender with which you identify   1). Male   2). Female   3). Other

3. Please circle the race(s) with which you identify

   1). Caucasian
   2). African American
   3). Hispanic/Latino
   4). Native American/Alaska American
   5). Asian American
   6). Native Hawaiian/Pacific Islander
   7). Middle Eastern/North African
   8). Two or more races

4. Have you taken a leave of absence from the nursing program for a semester or longer?
                    1). Yes   2). No

5. Is English the primary language that you speak?
                    1). Yes   2). No

6. Do you have a previous college degree?
                    1). Yes   2). No

   If yes, please list your previous degree(s)_____

7. Do you have experience working in a health care setting outside of nursing school?
                    1). Yes   2). No

   If yes, please list your position_____

   If yes, please list how long you have held the position_____

Appendix L: Clinical Educator Summative Questions

Evaluation of Clinical Growth and Nursing Student Motivation in the Traditional Clinical Learning Environment

Clinical Educator Summative Clinical Rotation Questions

Directions: Clinical growth of nursing students is a complex process and as an educator, you have a unique perspective to contribute. Please use the sheet provided to answer the following two questions.

1. What do you think contributed most to the students' clinical growth in this course?

2. What do you think contributes most to a student's clinical growth overall?

Appendix M: Student Summative Clinical Rotation Questions

Evaluation of Clinical Growth and Nursing Student Motivation in the Traditional Clinical Learning Environment

Student Summative Clinical Rotation Questions

Directions: Clinical growth of nursing students is a complex process and as a student, you have a unique perspective to contribute. Please use the sheet provided to answer the following two questions.

1. What do you think contributed most to your clinical growth in this course?

2. What do you think contributes most to a student's clinical growth overall?

Appendix N: Established Criteria for Items on the CCEI

ASSESSMENT Discussion Worksheet *Each bullet point is an example that could fit under each item, there could be others that fit that are not listed*

Obtains Pertinent Data

- **Completes necessary focused assessment (Respiratory/GI/etc.)**
- **Seeks out nurse to receive patient report**
- **Looks up additional information in patient chart**
- **adapts assessment skills to developmental age and cognitive age of patient**
- **inclusive of family as appropriate for assessment**

Performs Follow-Up Assessments as Needed

- **Reassess if BPEW score is greater than 4 or if not within baseline for patient**
- **Pre and post assessment when administering a respiratory treatment**
- **Pre pain assessment and post re-assess after administering pain medication**
- **Reassess following prn medication (antipyretics – Tylenol, Motrin; antihistamine – Benadryl)**
- **Assessment completing following procedure that required sedation (PICC line, CT, etc)**

Assesses the Environment in an Orderly Manner

- **Verbalizes how he/she is keeping the patient safe (Ex: I'm putting the call light next to you in bed)**
- **Demonstrates checking correct IVFs at start of shift, checking alarm limits, checking safety equipment at bedside**
- **Safe Sleep practice**
- **organization of room if 'cluttered' – in collaboration with family if present**

COMMUNICATION Discussion Worksheet

Communicates Effectively with Intra/Interprofessional Team (TeamSTEPPS, SBAR, Written Read Back Order)

- **Participates in patient rounds on the unit**
- **Notifies primary RN and/or clinical instructor of patient updates**
- **Notifies physician/pharmacist/other team member of patient update or issue as appropriate**
- **Appropriate use of technology to contact staff/physicians (Vocera, paging, etc)**

Communicates Effectively with Patient and Significant Other (verbal, nonverbal, teaching)

- **Respectful of patient and family needs**
- **Uses developmentally appropriate approach with both the patient and family**
- **Communicate to the patient and/or family the rationale for the medication, procedure and plan of care, etc**
- **Educates using the teach back method**
- **Updates 'white board' inside the room with plan of care and care providers**

Documents Clearly, Concisely, & Accurately

- **EPIC charting is completed in a timely manner for review by RN or instructor**
- **Documentation is complete, inclusive of hourly checks, I &O's, sedation scores, etc.**
- **Note is written when appropriate**

Responds to Abnormal Findings Appropriately

- **Informs instructor/primary RN of patient findings or situation in a timely fashion**
- **Seeks out assistance in response to abnormal findings**
- **Reports abnormal vital signs findings or BPEW scores (or not within patient baseline) to RN or clinical instructor**
- **Communicates changes in plan of care to nurse, instructor and family**

Promotes Professionalism

- **Respectful tone used in communication with peers, RN, clinical instructor, and patients**
- **Cultural differences acknowledged and accommodated if possible**

CLINICAL JUDGMENT Discussion Worksheet	*** This can occur with clinical instructor, RN, or in post conference***

Interprets Vital Signs (T, P, R, BP, Pain)

- **Understands differences in vital signs for children of various ages and conditions**
- **Understands when to report an abnormal (or not within patient baseline) vital sign to RN or clinical instructor**

Interprets Lab Results

- **Understands differences in lab values for children based on age**
- **Understands various lab values and how they relate to the clinical presentation of the child**
- **Understands trends in lab values related to the patient's current condition**

Interprets Subjective/Objective Data (recognizes relevant from irrelevant data)

- **Recognizes salient information when caring for a patient (Ex: comments made by parents that might go unnoticed)**
- **Recognizes salient objective data and able to make connections to the bigger disease process**

Prioritizes Appropriately

- **Prioritizing care using a guiding framework such as Airway, Breathing, Circulation (ABCs)**
- **Understanding urgency in certain situations and responding appropriately**
- **Re-prioritizes plan of care as the clinical day progresses**

Performs Evidence Based Interventions

- **Interventions are performed based on evidence and literature: (Ex: incentive spirometer every 2 hours while awake, turn cough deep breathe, ambulate three times a day)**
- **Uses P&P of clinical site to guide practice**

Performs Evidence Based Rationale for Interventions

- **Able to express the rationale for selecting certain interventions**
- **Understands why an intervention is performed for a particular patient**
- **Able to integrate rationale of P&P into evidence based knowledge**

Evaluates Evidence Based Interventions and Outcomes

- **Evaluates when the plan of care needs to be changed (Ex: are different interventions needed, is the time frame reasonable for the outcome)**
- **Discusses the effectiveness of interventions and outcomes that are currently in place**
- **Understands the rationale for a change in an intervention when it is not effective**

Reflects on Clinical Experience

- **Contributes to discussion regarding personal actions throughout the clinical day**
- **Able to discuss personal thoughts or elaborate on why decisions were made during the clinical day**
- **Considers how the clinical experience can be used in future practice**

Delegates Appropriately

- **Specifically asks for assistance from care partners and/or peers with tasks that are within their scope of practice**

PATIENT SAFETY Discussion Worksheet

Uses Patient Identifiers

- **Using patient's name and date of birth as identifiers when passing medications, performing a procedure, breast milk storage and feeding, checking blood sugar, and drawing labs etc.**
- **Complete identification and labeling process for lab samples that are sent to lab**

Utilizes Standard Practices and Precautions (ie: Including Hand Washing)

- **Washing hands with soap and water/hand sanitizer upon entering and exiting patient's room, before and after using gloves, and before and after procedures, etc.**
- **Following isolation protocol for each patient (contact, droplet, contact and droplet, etc.)**
- **Considers rationale for isolation and determines if it can be discontinued (or does patient need to be placed in isolation)**

Administers Medications Safely

- **Understands all aspects of each medication; drug class, nursing implications, adverse effects, and the specific reason why a medication is given to that particular patient etc.**
- **Calculates safe dosage ranges, checks for compatibility, and concentration etc.**
- **Incorporates the five rights of medication administration; patient, drug, dose, route, time**
- **Recognizes what medications cannot be administered by the nursing students**

Manages Technology and Equipment

- **Correctly uses IV pumps, syringe pumps, and kangaroo pumps**
- **Correctly uses blood pressure monitor, SpO2 probe, and other technology in the patient's room**
- **Responsive to monitors and alarms that are sounding on the unit appropriately**

Performs Procedures Correctly

- **Follows policies and procedures: flushing a PIV, G-tube care, cap changes, dressing changes, use of PCAs, use of NG tubes, parental nutrition, and drawing blood from a central line etc.**
- **Maintain sterile field when applicable**

Reflects on Potential Hazards and Errors

- **Discusses situations could/can cause problems with patient safety (Ex: distraction while administering medication, seizure precautions)**
- **Integrates developmental aspects for patient risks (side rails up, not left in high chair alone, lines secure and not pulling, etc)**
- **Thinking back upon the clinical experience and consider ways to ensure patient safety**

Appendix O: Timeframe for Current Research Study

Calendar Months	Before Sept 2017	Oct 2017	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	April 2018	May 2018	June 2018	July 2018	Aug 2018
Conceptual Phase												
Problem identification	▓											
Literature review	▓											
Clinical fieldwork	▓											
Theoretical framework	▓											
Hypothesis formulation/ Research questions	▓											
Design/Planning Phase												
Research design	▓	▓										
Population specification	▓	▓										
Sampling plan	▓	▓										
Data collection plan	▓	▓										
Ethics Procedure	▓	▓										
Finalization of plans	▓	▓										
Pilot Instrument	▓	▓										
Empirical Phase												
Collection of data		▓	▓	▓	▓	▓	▓	▓	▓			
Data preparation									▓	▓		
Analytic Phase												
Data analysis									▓	▓		
Interpretation of results									▓	▓		
Dissemination Phase												
Presentation/reports											▓	▓
Calendar Months	1	2	3	4	5	6	7	8	9	10	11	12+