ENHANCING THE STUDENT NURSE CLINICAL EXPERIENCE THROUGH

COLLABORATIVE ACADEMIC-HOSPITAL PARTNERSHIPS: THE PILOTING AND

PSYCHOMETRIC TESTING OF A NEW INSTRUMENT TO MEASURE NURSING

STUDENT PERCEPTIONS OF NURSING STAFF DURING CLINICAL LEARNING

EXPERIENCES

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Clinical Learning Experiences

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ABSTRACT

There is a critical national nursing workforce shortage, with estimates of over 200,000 new job openings for Registered Nurses (RNs) annually through 2031 (AACN, 2022). These forecasted workforce needs challenge nursing programs to increase student enrollment (Dowling et al., 2021) while maintaining high-quality education standards. Student learning is facilitated by collaborative academic healthcare practices that provide active learning environments for students to engage in direct patient care under the direct supervision of a licensed nurse. The interactions between students and mentors within the clinical environment are essential for cultivating a sense of belonging while fostering the development of the professional nurse role. Exploring factors impacting the quality of learning experiences from a student's perspective provides valuable information to support best practices in an ever-changing education and healthcare environment. Although research has examined nursing student perceptions of clinical learning experiences with trained faculty and preceptors (Chan, 2001; Blegen et al., 2015), there is a lack of survey instruments designed to explore the inviting behaviors of nursing staff. This project aimed to examine the psychometric properties of a new instrument designed to examine nursing student perceptions of nursing staff behaviors during clinical learning experiences. Collaborative academic healthcare practices facilitated the refinement and piloting of the survey instrument. Rasch methods were used to examine responses from nursing students enrolled in licensed practical, associate, and baccalaureate nursing programs who had attended clinical experiences at one hospital organization. Several aspects of validity were explored using Russell's (2022) Justification of Use model and Messick's (1994) unified framework of construct validity as a guide. Study findings reinforce the importance of examining more than one aspect of validity before using survey results to make inferences or generalizability claims.

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To the nursing students I have encountered in my nursing education career, thank you for being open and honest when sharing your thoughts and feelings regarding mentoring practices. Your collective voices inspired me to focus my research on student perspectives of belonging. I look forward to engaging in more discussions to support students as they transition into the nursing profession.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

When nursing students graduate and become licensed professionals, they are expected by academic programs and future employers to have acquired the knowledge and skills to perform competently and safely in the patient care environment (Rusch et al., 2019). "To meet the demands of a dynamic and complex healthcare landscape, nursing education must develop and implement programming to produce a highly educated nursing workforce" (Navarra et al., 2018, p. 20). Academic standards are in place to guide nursing programs and ensure students meet these professional expectations, which support them in being practice-ready nurses. Becoming competent and practice-ready is attained through many types of classroom, laboratory, simulation, and direct patient care experiences that provide opportunities for students to acquire and apply the knowledge and necessary skills. The clinical learning environment (CLE) uniquely provides opportunities for students to apply knowledge and develop skills while becoming socialized into a professional role (Livsey, 2009; McCabe, 1985; Thomas et al., 2016).

The CLE is a valuable and necessary learning platform for nursing students; therefore, examining its many aspects is essential. National accrediting agencies such as the Commission on Collegiate Nursing Education (CCNE) define nursing clinical practice experiences as "planned learning activities in nursing practice that allow students to understand, perform, and refine professional competencies at the appropriate program level" (American Association of Colleges of Nursing [AACN], 2022). In addition to supporting the development of student competence and confidence, these practices also assist with meeting learning outcomes (Phuma-Ngaiyaye et al., 2017). The CLE enables the progression of nursing student learning by providing a platform that continually builds upon prior experiences. Actively practicing within this environment assists students with applying theory into practice and improving nursing skills

while supporting professional growth (Amimaruddin & Ruditaldris, 2022). By incorporating these types of hands-on clinical experiences into their curriculum, students can synthesize and apply what they learn in the classroom.

Students should be positioned to learn in an environment that promotes a sense of belonging where they can feel safe, included, and involved while advancing from student to professional nurse. These experiences are intentionally designed for nursing students to gain confidence with specific skill sets such as collaboration, communication, and prioritization, which is foundational for advancement within their role toward becoming licensed RNs (Kaihlanen et al., 2017). Several researchers have described the CLE as one that can strongly influence student engagement and overall learning (Gierach et al., 2019; Hamshire & Jack, 2020; Letcher & Nelson, 2014; Newton et al., 2011). Although direct patient care clinical experiences are necessary for their educational training, nursing students have viewed these experiences as stressful and anxiety-provoking (Sharif & Masoumi, 2005).

As role models, nurses who serve as guides and mentors during clinical experiences play a critical role in facilitating student learning (Tuomikoski et al., 2018). Amimaruddin and Ruditaldris (2022) identified that the student-nurse role during clinical experiences "can be either a positive or negative depending on what kind of relationship that the student and nurse had" (p. 33). Furthermore, several research studies exploring the relationships between nursing students, nursing faculty, and staff members have identified CLEs as being perceived as challenging when clinical faculty and staff nurses are not supportive (Cook, 2005; Chesser-Smyth, 2005; Gillespie, 2002, 2005). This shortage of clinical placement sites, combined with a lack of nursing faculty and nursing staff who serve as preceptors and formal mentors, poses several challenges for

nursing programs to meet the demands to produce practice-ready nurses while meeting necessary standards (Downling et al., 2021).

Nursing student clinical experiences occur through nursing programs and hospital partnerships that mutually recognize the importance for students to engage in supervised direct patient care experiences. These collaborative partnerships support nursing programs by providing active learning environments where students engage in unique hands-on perspectives, practice skills, and apply essential learning concepts necessary to practice as professional nurses. Furthermore, effective academic hospital collaboration practices that take a vested interest in student learning promote a team-based culture of belonging needed in ever-changing healthcare environments (Gierach et al., 2019). Guiding principles set forth by the AACN describe academic-practice partnerships as collaborative, respectful relationships with a shared commitment to "develop, implement, and evaluate organizational processes and structures that support and recognize academic or educational achievement" (AACN, 2022). Furthermore, the AACN identifies these collaborative relationships as opportunities to co-develop models to explore the design of practice environments while supporting a smooth transition for nursing students from the classroom to bedside practice.

Clinical learning experiences where students apply and synthesize textbook and classroom knowledge while engaging in hands-on direct patient care occur under the direct supervision of a licensed nurse. Nursing programs rely heavily on qualified nursing staff and educators to assist students with meeting their learning outcomes (Phuma-Ngaiyaye et al., 2017). Having students engage in these types of experiences promotes professional growth and provides opportunities for them to hear and observe what is done by role models (Thorell-Ekstrand et al., 1993). As mentors and role models, nurses are guided by certain professional expectations for

supporting the growth and development of future nurses (Institute of Medicine, 2011). Studies exploring the supportive practices of professional nurses indicate that compassionate and caring practices toward students positively affect their confidence levels, sense of belonging, and retention rates (Henderson et al., 2020).

Nationally recognized nursing organizations such as the AACN and the National League for Nursing (NLN) identify the values of being caring and compassionate as foundational to nursing (AACN, 2022; National League for Nursing [NLN], 2022). Although these expectations and values are inherent to the nursing profession, research has identified that nurses who guide and mentor students often feel overworked and emotionally exhausted (Kelly et al., 2021). Clinical experiences can be viewed as a window from which students receive a glimpse of what their role and career path as nurses may look like in the future. If nurses are exhausted and experiencing burnout, students may perceive their intentional and unintentional behaviors negatively. These negative perceptions could impact student learning or lead them to question their choice to become a nurse.

Within the clinical environment, the role of a nurse as a mentor and guide does not rely solely on academically trained educators. As Licensed Registered Nurses, both nurses who practice at the bedside and those who are trained educators possess a foundational knowledge base to support ongoing professional practices, which include student mentoring. Staff nurses, who are often referred to as preceptors, tend to be more familiar and experienced with clinical environment practices, such as understanding hospital policies, use of patient care medical technology, and healthcare team member collaboration practices. Nurse educators who serve as clinical instructors are responsible for ensuring students meet clinical-associated course and program outcomes. While both are expected, as defined within their scope of practice, to guide

and mentor students, there are differences in the definitions of their roles. Since this research

project focuses on nursing students' perceptions of the licensed nursing staff member role, the

differentiating aspects of their role and practices as compared to a nurse education are defined as

follows:

Preceptor: Happel (2009) defines a preceptor as an experienced, skilled, knowledgeable

nursing professional who supports and encourages the educational needs of students.

Additionally, a preceptor is defined by the North Dakota Century Code and by nursing program

standards as "an individual at or above the level of licensure that an assigned student is seeking

who may serve as a teacher, mentor, role model, or supervisor for the assigned student in a

clinical setting." While states vary in mentoring practice requirements, most licensing boards

require nurses who guide students in the clinical environment to have a minimum of an associate

degree, hold a valid R.N. license, and be employed by the clinical facility where student learning

occurs (North Dakota Board of Nursing [NDBON], 2023).

Nurse Educator: Many of the roles and responsibilities defined in a nurse preceptor's

role, such as guiding foundational hands-on skills, prioritizing patient care, and engaging in

collaborative practices, are often shared responsibilities of both the nurse educator and staff

nurse; however, nurse educators are expected to uphold additional task and degree requirements.

Within this paper, the term nursing faculty member will be used synonymously with the term

nurse educator. Accrediting state agencies, including the North Dakota Board of Nursing

(NDBON), require nursing faculty who supervise students in the clinical setting to possess a

Baccalaureate degree and either have or be actively pursuing a Master's or higher degree,

preferably in a focused area of nursing, education, or both. In addition to what is defined with the

preceptor role, it is common practice for faculty who guide clinical practices to provide students

with formative and summative performance evaluations to support their learning (Elwy et al., 2020). Termed by some clinical agencies as a "deep-dive" approach, nurse educators are expected to encourage students to engage in dialogue that promotes critical thinking and reasoning and provide constructive feedback to support learning behaviors and evaluation processes (Letcher & Nelson, 2014). With nursing staff playing an essential role in student learning, these experiences should be considered vital in supporting students' educational learning practices.

Mentor: Using Byrne and Keefe's (2002) definition, mentoring from a nursing context is a "voluntary alliance between an experienced senior professional and a less experienced one, for the dual purposes of career development and enhancement of the profession" (p. 391). Nurses who act as mentors possess role-modeling qualities (Eller et al., 2014; Foster et al.; Jack et al., 2017), such as being caring, supportive and clear communicators (Jack & Hamshire, 2019).

Exploring inviting role model practices within the CLE with an effective survey is one way to obtain information regarding how students are supported in their learning. Data collected through survey methods is useful if it conveys information accurately and consistently about a specific topic (Jones et al., 2013). Historically, survey methods have been used to gather information to understand better factors affecting nursing student learning in the clinical environment. Receiving student feedback from a well-designed and tested survey tool is one way for nursing programs to gain valuable data to support meeting student and program outcomes.

Because the environment where clinical learning experiences occur is essential for acquiring and advancing student knowledge, it becomes vital for nursing faculty and program directors to examine what factors within this type of environment impact learning. Obtaining student feedback has been deemed a necessary way for nurse educators to understand better how

the CLE influences behaviors and learning outcomes (Barron, 2021; Fink, 2008; Livsey, 2009; Ruesseler & Obertacke, 2011). Identifying best practices, including the actions of other nurses in supporting positive student learning experiences, sets a strong foundation for nursing programs to meet organizational outcomes while promoting ongoing student success. Furthermore, constant evaluation of the factors influencing student learning may help organizational leaders recognize and encourage positive change efforts (Kezar, 2001, 2018).

Scope of the Problem: Nursing Student Sense of Belonging

There is a critical national nursing workforce shortage, with estimates of over 200,000 new job openings for Registered Nurses (RNs) annually through 2031(AACN, 2022). Additionally, the AACN predicts one million working nurses will reach retirement age within the next decade. This alarming present and projected nursing workforce needs is complicated further by a problematic disproportional imbalance between the number of nurses from diverse backgrounds and the populations they serve (Bristol et al., 2020). These factors challenge nursing programs to increase student enrollment (Dowling et al., 2021) while maintaining high-quality education standards to meet student needs. With students as critical stakeholders, the quality of these learning experiences should be considered a necessary component for meeting these standards.

State and national accrediting agencies hold nursing programs accountable for meeting essential standards to ensure students receive the necessary education and training to become licensed practice-ready nurses. In 2022, national nursing program accrediting agencies, such as the American Association of Colleges of Nursing (AACN, 2022), modified standards for nursing programs, requiring them to move beyond merely documenting curricular requirements to provide instead evidence of how students are progressively applying what they are learning

throughout all didactic and clinical nursing courses. These new essential accreditation standards have added a layer of responsibility to nursing programs that are also being asked to increase student enrollment numbers to support anticipated nursing workforce needs. In response to these initiatives, it becomes essential for nursing programs to provide effective and supportive learning opportunities that assist with retention efforts while ensuring the achievement of student and program outcomes.

While research has identified the essential role of staff nurses in assisting students with their learning, more needs to be done to understand the impact of these interactions within the clinical learning context. Research studies and survey instruments have focused on student perceptions of their clinical learning experiences with trained faculty and preceptors (Chan, 2001; Blegen et al., 2015); however, very few tools have been created to explore purposeful inviting practices of the staff nurse. This identified lack of research creates opportunities to engage in practices that explore the impact of inviting and uninviting nursing staff behaviors on student learning from a student-focused perspective. Additionally, information gained by examining student feedback can facilitate a better understanding of what students expect from the staff nurse role.

Clinical practice experiences are heralded as an essential component of nursing student education; therefore, it becomes necessary for those who provide these experiences to ensure that the environment and facilitators of student learning are more than adequate. Identifying best practices within the CLE, such as how staff nurses support student learning, will assist with supporting students as they gain the necessary skills and confidence to progress from novice to expert nurse (Benner,1982, 1984, 2000). With academic and healthcare organizations taking a joint vested interest in providing exceptional clinical experiences for students to assist with

addressing these challenges, it becomes essential to explore student perceptions of the practices within these environments.

This paper aims to describe the nursing student clinical learning environment while exploring the psychometric properties of a new instrument to understand student perceptions of inviting behaviors within the CLE. As shared by Jones et al. (2013), "Validated instruments are those that have been extensively tested and are correctly calibrated to their target" (p. 5). The Student Clinical Experience Survey (SCES) tool will be created through a unique collaborative academic-hospital partnership between myself and five research team members from the same healthcare organization where student clinical experiences will occur. Prominent themes guiding the survey creation process include how students perceive a hospital organization's nursing staff as welcoming, supportive, valuable resources, and role models. Gathering feedback through survey methods will assist nurse educators and hospital administrators with evidence to support positive clinical learning practices. Specific factors being explored with this project include the non-faculty nurse's role as a student mentor and preceptor within the clinical practice environment.

Inviting interactions between nursing students and staff nurses are believed to support positive learning environments. Experiences that may directly affect students' sense of belonging influenced by inviting role model behaviors will be considered a continuous latent construct throughout the survey development process. These initial steps of the instrument validity process will create opportunities to support future verification, interpretation, and use justification. The survey development process will be used to understand the following research question better:

1. What are the psychometric properties of the SCES, and to what extent does the SCES effectively measure nursing students' perceptions of inviting practices of nursing staff within the clinical practice environment?

Theoretical Overview

The focus of this study is to evaluate the psychometric properties of a new instrument to support measuring the inviting practices of staff nurses towards nursing students during clinical learning experiences. Educational and psychological measurement, survey design methods, and theories informing the student learning environment will provide an overarching framework to guide the research process. Careful attention to the instrument development process must occur for an instrument to be purposeful and useful.

During the instrument development phase, items and response options should be created to reflect the instrument's purpose while relating to the latent variable (DeVellis & Thorpe, 2022). Using Russel's (2022) Justification of Continued Use model, the purpose of an instrument must first be established through the construction and testing phase to determine how results can be interpreted to support decisions and actions. Additionally, steps should be taken to ensure constructs were defined and that survey items related to only one latent variable (Write & Stone, 1979).

A clear understanding of underlying theories guides the survey development process. Since the survey instrument design focuses on measuring student perceptions of inviting behaviors of nursing staff members in a CLE, it aligns well with the defining features of Bronfenbrenner's Ecological Systems Theory. Bronfenbrenner's Ecological Systems Theory encourages examining several types of environmental factors that directly affect an individual. From a contextual standpoint, the Ecological Systems Theory takes a relationship approach to

identify how multiple aspects within the learning environment, such as cultural, social, economic, and political factors, influence the development of a person (Bronfenbrenner, 1979; Darling, 2007). Nursing students are influenced by many interactive dynamic factors within their environment, and Bronfenbrenner's theory and model assist with exploring the effects of these factors (Bronfenbrenner, 1999).

Clinical learning experiences are active learning processes within a social context. The behavior of others within this context can positively or negatively impact nursing students' personal and professional development. Tucked within Bronfenbrenner's Ecological Systems Theory, the inviting practices across several socially constructed environments will be explored. A broader systems-based theoretical approach will assist with gaining more insight into how students who bring prior experiences perceive interactions with nursing staff within the CLE.

This guiding theoretical framework and supporting literature review provide foundational elements while highlighting essential aspects within the CLE that influenced the survey instrument development and psychometric testing process. Additionally, a description of survey methods, methodology, and proposed research findings reinforce the significance of this project. A student-focused approach towards obtaining feedback with survey methods will provide evidence to understand better how students perceive the staff nurse's role in facilitating an inclusive, welcoming, and supportive student learning environment.

Organization of the Study

Chapter two contains a review of the theoretical framework for this study, including the practices and processes associated with the CLE of nursing students. Theoretical frameworks and supporting literature relating to the CLE will provide a foundation of evidence for the study. Several frameworks are interwoven to create a synergistic platform for exploring student

perceptions of inviting practices among staff nurses. Theories included in this framework relate to inviting practices, caring behaviors, socio-ecological perspectives of interactions within the environment, and mentoring practices. Within these theories, further exploration of factors influencing student perceptions of their learning environment will include one's sense of belonging, diversity and inclusivity practices, climate and culture, and change. Additionally, I will provide a discussion of current approaches and survey instruments that have been used to measure nursing students' perceptions of their CLE. Chapter three will describe the research design and Rasch modeling analytical methods used in this study. Results will be shared in chapter four, followed by a discussion of the findings in chapter five.

CHAPTER 2: LITERATURE REVIEW

A nursing program's curriculum is intended to provide opportunities for students to demonstrate how their learning is progressing from an introductory to a mastery level (AACN, 2022; Benner 1982, 1984, 2000). While classroom experiences are built upon acquiring new knowledge, the CLE is where students can take this knowledge, reinforce concepts, and create lived experiences. "Educators need student feedback to better understand the CLE's influences on learning and behavior" (Livsey, 2009, p. 53). Ensuring students are progressing and meeting education requirements supports the requirements for nursing schools to meet course and program outcomes so that students can safely practice as licensed professional nurses.

This chapter aims to provide a literature review examining several factors associated with the nursing student CLE to support the development of a new survey instrument to measure nursing students' perceptions of nursing staff during CLEs. First, I provide an overview of theoretical perspectives related to the processes, practices, and influences within the CLE. As defined by Livsey (2009), "the CLE is the conditions, forces, social, and environmental influences as perceived by nursing students within the applied learning environment of the clinical, educational setting" (p. 54). Additionally, I will include a review of complementary theories and models to support examining student perceptions of the CLE. These theories and models relate to concepts associated with socio-ecological perspectives with an emphasis on inviting practices. Next, I will explore literature related to survey instrument development, specifically focusing on scale development and perspectives regarding the definitions of validity. This chapter concludes with a critique of existing survey instruments designed to explore nursing student perceptions of the CLE to support the development of a new survey instrument to measure nursing student perceptions of inviting staff nurse behaviors within the CLE. An

analysis of existing evaluation tools will assist with understanding what has been used to explore and evaluate nursing student learning within the clinical setting.

Overarching Theoretical Framework: Bronfenbrenner's Ecological Systems Theory

Bronfenbrenner's Ecological Systems Theory has been widely accepted in education to explain personal development as a process that relates to the interactions between an individual and their environment (Renn & Arnold, 2003). Relationships between the person and environment are viewed as dynamic, and careful attention is placed on the context where development and learning occur (Hickey et al., 2012). The Ecological Systems Theory model evaluates how individuals invite, inhibit, react to, explore, engage in, and view their environment (Bronfenbrenner, 1993). Special attention is focused on the "synergistic effects created by the interaction of developmentally instigative or inhibitory features and processes present in each setting" (Bronfenbrenner, 1993, p. 22).

Drawn in a schema of layers, the Ecological Systems Theory model outlines five central systems: the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. While somewhat independent, each system affects a student's perception of their environment and sense of belonging (Bronfenbrenner, 1993). All variables within each system layer influence human behavior, with the most proximal system exhibiting more significant influence on behavior than systems positioned further away (Brewer et al., 2018).

Bronfenbrenner (1979) describes the most proximal microsystem as part of direct interconnectedness and a "complex of interrelations within the immediate setting" (p. 7). Within the microsystem of social constructs, the support that nursing students receive from families and friends may remain constant as they enter their clinical practicum environment; however,

adaptive changes to the exosystem and macrosystems of this environment could impact student learning.

The next extending mesosystem layer interacts with the microsystem layer but relates more to processes and teaching practices, such as those that can be reflected in a school's culture or organizational structure (Sharma et al., 2021; Charland, 2011). Within the mesosystem, "the principle of interconnectedness is seen as applying not only within settings but with equal force and consequences to linkages between settings, both those in which the developing person actually participates and those that they may never enter but in which events occur that affect what happens in the person's immediate environment" (Bronfenbrenner, 1979, p. 7). Described as a web of linkages and processes between two or more settings, the mesosystem and the influencing aspects of the microsystem have been used to provide a lens for closely examining how an environment's physical, social, and symbolic features affect engagement (Strange & Banning, 2015).

Extending further, the exosystem is similar to the mesosystem in that it includes microsystems that interact with each other. The exosystem differs from the mesosystem layer in that it relates to not being a part of but instead being affected or influenced by factors within the environment (Crawford, 2020). Parental and faculty expectations are examples of indirect influences that can affect student performance or behaviors within their environment.

The more distal and overarching macrosystem layer includes social policies, procedures, and laws and focuses on how the overall climate and organizational expectations affect attitudes, perceptions, and behaviors from a broader and diverse perspective (Allen et al., 2016; Hurtado et al., 2008; Saab, 2009). As students are immersed in environments governed by new policies,

procedures, and practices, developing new social norms may directly impact their personal and professional development.

Lastly, the chronosystem recognizes the environment as being in a constant state of change. The chronosystem acknowledges all types of environmental changes, including present and past experiences, as influencing factors on how one adapts or transitions through life. Additionally, this system layer recognizes the characteristics of people are not static in ever-changing environments (Hickey et al., 2012).

Bronfenbrenner's Ecological Systems Theory assists with examining relationships within specific environments. The layered systems model, separated by different defining characteristics, forms a distinct yet complementary component for understanding the environment's effects on a student's persona. The student is at the center of overlapping system layers, and the interaction within each layer assists with examining the influence of multiple types of relationships within specific environments, which can affect one's sense of belonging (Bronfenbrenner, 1979). Using Bronfenbrenner's Ecological Systems Model as an overarching theoretical framework provides a means to explore how influencing relationships within the clinical setting may impact student learning. This review will use the Ecological Systems model to explore several influencing factors and theories associated with the CLE.

Microsystem in Nursing Environments

From an educational and learning context, the most proximal microsystem layer explores interactions and processes within one's environment on a more intimate and personal level. The microsystem layer consists of an individual's immediate environment, such as family, friends, and mentors, which actively and directly influence relationships (Bronfenbrenner, 1979). These personal and influential relationships within this level are independent variables influencing

dependent variables such as moral development and knowledge acquisition (Brewer et al., 2018). The nursing profession comes with high expectations and ethical standards for practice (American Nurses Association [ANA], 2023). The interactions with peers and faculty within this environment greatly facilitate the growth and development of student learning to adopt these professional expectations.

Sense of Belonging

College and university experiences provide opportunities for students to become independent and enhance their identities within a new learning environment. The connection of relationships within this new socially constructed environment is called the campus climate (Hurtado et al., 2008). As supported by Hurtado et al. (2008), "campus climate is part of an intricate web of relations, socially constructed by individuals in an environment" (p. 204). Closely examining the learning environment provides students and educators with opportunities to identify barriers and opportunities to support the student learning climate. As Museus (2007) shared, observing the context where individuals interact is essential for obtaining objective data without preconceived notions. By listening to and watching students engage in learning practices, educational leaders convey that they value others' perceptions and want to understand better what shapes their behavior.

Many aspects contribute to an educational environment and climate. Knowles (2011) shared that a supportive learning climate is a critical element of human development, and facilitation in the development of individuals evolves through improving the educative quality of their environments. Strange and Banning (2015) support that the behavior setting contains both physical and social aspects, and it is the "transactional relationship between these elements in the setting that shapes behavior" (p. 17). While exploring over 90 assessment tools related to campus

climate, Hurtado et al. (2008) identified the importance of educational institutions offering academic support, co-curricular and curricular initiatives, and space for students to feel safe and supportive of their social identities.

For college students, the learning environment provides opportunities for them to feel safe, included, and involved. Strange and Banning (2015) identify that an "inclusive and safe learning environment should be welcoming, functional, flexible, esthetic, reflective, regenerative, distinctive, and sustainable" (p.25). Colleges and universities are uniquely positioned to provide a learning environment that supports a sense of community by promoting a sense of belonging. Creating an inclusive and welcoming atmosphere with active learning has helped students achieve their learning outcomes (Bucholz, 2009). Research conducted by Sanchez, Colon, and Esparaza (2005) identified higher motivation factors and academic outcomes were strongly associated with students' sense of belonging.

A sense of belonging is supported by an inclusive and safe learning environment that should be welcoming, functional, and sustainable for college students (Strange & Banning, 2015). Ethnographic research conducted by Sedgwick and Yonge (2008) has identified a sense of belonging as a "universal characteristic of a human being and a basic human need" (p. 1). "When students experience a high degree of social presence, they associate themselves as part of a group. When students experience a sense of belonging, they are aware that other people with unique thoughts, feelings, and perspectives are involved in the learning process with them" (Pacansky-Brock, 2014). It has been identified that belonging is beneficial, and individuals are often motivated by a need to form attachments and belong (Baumeister & Leary, 1995). Allen et al. (2021) describe a sense of belonging as "the subjective feeling of deep connection with social groups, physical places, and individual and collective experiences and a fundamental human

18

need that predicts numerous mental, physical, social, economic, and behavioral outcomes. (Allen et al., 2021, p. 87).

Nursing schools are uniquely positioned to promote a learning environment that supports a sense of community and belonging. Within the clinical setting, it has been noted that positive relationships facilitate student learning by fostering a sense of belonging where students feel respected and valued (Kern et al., 2014). Models such as the Practice Learning and Teaching Orientation Tool (PLATO), an educational tool built around learning partnerships in clinical education, have also been used to augment efforts in support of a positive and engaging student learning environment (Hamshire & Jack, 2021; Jack et al., 2018; Jack & Hamshire, 2019; Letcher & Nelson, 2014). Hamshire and Jack identified the PLATO educational tool as a means of encouraging students to seek out good practices and focus on the positive aspects of their learning. Furthermore, the PLATO used student perspectives to support educational practices.

While exploring measures to create a welcoming nursing student practice environment, actions such as introducing oneself, showing interest in the students learning, encouraging participation, and providing positive feedback fostered a welcoming culture of belongingness (Tremayne & Hunt, 2019; Kern et al., 2014). Results from a descriptive correlational research study examining the relationship between a nursing student's sense of belonging and perceived stress during their clinical experiences identified a sense of belonging as fundamentally important while significantly impacting students learning, motivation, and confidence levels (Grobecker, 2016). By closely examining the student learning environment, academic leaders will have evidence to support and enhance personal growth while promoting a sense of community and belonging. These findings should constantly remind researchers how essential a sense of belonging within a welcoming environment is to student learning.

Exploring a sense of community within one's environment has also been used to study how relationships influence and relate to one's sense of belonging (Stewart & Townley, 2020). While exploring the literature surrounding a sense of community, evidence suggests that the environment and the formed relationships within this environment influenced a positive sense of well-being. A sense of belonging within groups has also been found to positively affect self-esteem, self-efficacy, personal satisfaction, and overall well-being (Haslam et al., 2009; Allen & Bowles, 2012; Allen et al., 2021). As students evolve from students to professional nurses, new relationships develop, including those between students and professional practicing nurses. Bronfenbrenner's model provides a platform to closely examine personal and environmental relationships and how they evolve through these ongoing interactions (Strange & Banning, 2015).

Caring Practices

As students transition from classroom to clinical practices, new relationships are developed and fostered through the guidance of others. Nel Noddings (2005) encourages the essential elements of education to be relational and reciprocal. Furthermore, Nodding's knowledge-sharing point of view emphasizes an empathetic mindset where value is placed when one tries to imagine another person's situation. In taking a concern for others approach, virtue ethics scholar Michael Slote (2007) views empathy as the cornerstone of caring behaviors. By adopting a compassionate, empathetic, and collaborative approach, educational leaders can better recognize and embrace others' diverse experiences and understand how these experiences may influence thoughts, ideas, feelings, and actions.

Within the microsystem layer, supportive and caring academic-clinical environments can be modeled around team-based caring education models designed to guide hospital staff, faculty,

and student practices in the clinical nursing environment (Gierach et al., 2019). The Culture of

Caring (COC) academic-hospital caring model was designed to support education and hospital

practice partnership while strengthening nursing students, clinical faculty, nurses, and staff

relationships within the clinical environment (Letcher & Nelson, 2014). The COC model

identifies the importance of academic-clinical partnerships with good collaborative practices that

promote excellence in teaching, learning, and patient care. The Caring Dimensions Inventory

(CDI-25) is another caring-based practice tool developed to examine the impact of

preceptorships in the clinical nursing environment (Barron, 2021). With the CDI-25, Barron

(2021) identified that solid and caring relationships between nurse preceptors and students

significantly impacted overall behaviors, attitudes, and experiences. These types of caring

frameworks support best practices by enhancing the teaching-learning environment while

strengthening student learning experiences.

Theories such as Jean Watson's Theory of Human Caring have been developed to

support a caring learning environment where human caring is a process and human actions are

interconnected to praises and struggles (Watson, 2008). Nursing as a caring human science is

ongoing, dynamic, and abstract as opposed to static and concrete, where the nurse and person are

viewed as co-participants. As further supported by Watson (2012), "human caring science is an

epistemology that allows not only for empirics, but for the advancement of esthetics, ethical

values, intuition, and process discovery which values interhuman events, processes, and

relationships" (p. 16). A caring approach to examining the relationships within a student's

learning environment facilitates understanding student perceptions of their learning experiences

through an empathetic lens (Morrison, 2012; Norman, 2012; Sokola, 2013). Furthermore,

applying a theory of human caring to the delivery process of healthcare has been considered foundational for nursing practice (Bent et al., 2005).

Slote (2007) portrays the concept of caring as being something that cannot be delegated or expected. According to Slote, "caring for others is not something one can inculcate simply by telling or even persuading people that they *ought* to care, so attention needs to be paid to the processes whereby people come to care about people they know" (p. 30). Studies involving nursing students have supported examining the CLE from a caring context. In a cross-sectional quantitative survey study by Wei et al. (2021), nursing students' perceptions of a faculty's caring behaviors significantly impacted their learning. Wei et al. (2021) identified human caring as "central to the discipline of nursing, and nursing education is the root to germinate student's caring attitude and the foundation of high-quality patient care" (pp. 123-124). Findings from a quantitative survey research study by Rhodes et al. (2011) identified that student nurses view caring as central to nursing and a critical component of the professional role.

Diversity and Inclusivity

Supportive learning environments allow nursing students to care for individuals from diverse backgrounds. Recent United States (US) reports indicate that nearly 40 percent of the population identifies as belonging to a different ethnic or racial group (Bristol et al., 2020; United States Census Bureau, 2023). The current nursing workforce needs to mirror US trends and warrants a critical look at efforts that support diversity in nursing (Graham et al., 2016). While examining these trends, Douglas et al. (2014) identified the importance of creating culturally competent guidelines for nurses caring for many patients with healthcare beliefs and practices that may differ from their own (Douglas et al., 2014). Recognizing that nursing is a profession that spends the most time with patients in the healthcare environment further supports

the need to recruit and retain a workforce that mirrors the US population (Morrison et al., 2021).

Examining the disproportionate number between the US population and the nursing workforce

intensifies the need for nursing programs to recruit more students from diverse backgrounds,

understand the needs of diverse nursing students, and provide appropriate education and training

(Veal et al., 2012).

The call for diversity in nursing is a topic that has been discussed previously, and there

has been a long history of identifying the challenges. In 1994, the Institute of Medicine (IOM)

addressed the need for diversity in nursing (Institute of Medicine, 2011). In 1997, a leading

researcher on the topic of diversity in nursing, Jeanette Vaughan, highlighted that everyone was

talking about the topic of and importance of diversity, but more needed to be done to support

these efforts. Furthermore, efforts by nurses to confront and eliminate stereotyping by being

supportive role models seem to have been ignored (Vaughan, 1997). Throughout the past few

decades, nursing students from diverse backgrounds have continued to identify barriers such as

financial issues, inadequate study skills, and lack of support from family and mentors (Graham et

al., 2016; Amaro et al., 2006).

While acknowledging a nationwide lack of diversity among nursing majors, several

authors have identified the benefits of focusing on underrepresented population recruitment and

retention efforts to support the predicted nursing shortage and assist with reducing health

disparities (Bleich et al., 2015; Brooks-Carthon et al., 2015; White & Fulton, 2015; DeWitty &

McCamey, 2022). Furthermore, an integrated review of experiences among African-American

nursing students found common themes supporting the lack of diversity in nursing while

suggesting the need to create opportunities for African-American students to gain a sense of

belonging through positive faculty relationships, academic support, and social support (White &

Fulton, 2015). As decades of evidence point to a need to facilitate and support minority students, recent research acknowledges the lack of evidence to support what teaching and learning activities are being implemented to promote inclusive practices (Oozageer Gunowa et al., 2020).

The AACN has taken a position to "recognize diversity, inclusion, and equity as critical to nursing education and fundamental to developing a nursing workforce able to provide high quality, culturally appropriate, and congruent health care in partnership with individuals, families, communities, and populations" (AACN, 2022). Nursing schools must provide learning platforms that provide education to support caring for the needs of our diverse population (Breslin et al., 2017). Because nurses care for individuals from diverse populations and in many types of environments, it becomes critical for nursing programs to ensure that reliable student resources are available and usable within their programs. Nursing programs are expected to increase diversity in nursing education, and these efforts ultimately support the nursing profession (NLN, 2016).

Integrating diversity into nursing programs is one way organizations can actively support an inclusive and equitable environment (AACN, 2022). McNair et al. (2020) shared that "being equity-minded involves examining data disaggregated by race, noticing racial inequities, examining outcomes, and making sense of that data in critical ways" (p. 55). "As higher education becomes increasingly racially and ethnically diverse, learning environments must be structured and facilitated to meet the learning needs of students" (Dawson et al., 2022, p.3). To support equity, diversity, and inclusive practices within nursing programs, the AACN has increased its efforts over the past few years to partner with grant-funding organizations, such as the Robert Woods Johnson Foundation (Diverse Education, 2021). Educators who practice equity talk and equity walk must take action steps, including examining institutional policies and

practices while questioning why inequity exists and processing through the steps that would facilitate change (McNair, 2020).

Specific models have been used to support diversity, equity, and inclusive practice in nursing. The Pathway to Excellence framework is based on six evidence-based research standards that promote leadership, shared decision-making, safety, and quality by incorporating professional development activities and strategic planning efforts (Morrison et al., 2021). Training institutes have also been developed to support educational practice for nursing faculty members. In a study by O'Connor et al. (2019), a three-day program was implemented to provide education and training to support open communication with sensitive topics, especially in nursing. While limited to 44 participants from one School of Nursing, the three-day program yielded promising results by demonstrating a statistically significant increase in teaching self-efficacy and overall satisfaction levels at the end of the program. A creative approach involving sharing stories about diverse perspectives of the learning environment has also been taken to support nursing faculty working with diverse and at-risk nursing students (Bristol et al., 2020). Titled the "Diversity World Café," this collaborative approach assisted with identifying common challenges experienced by diverse nursing student populations, such as a lack of role models and mentors, faculty diversity, and inadequate resources. While recognizing the need for nursing faculty training, Frazer et al. (2021) discovered that diversity and inclusion practices and the training to support these practices are critical components for building healthy classroom environments. By supporting self-awareness strategies that examine biases, assumptions, and inclusive practices, nurse educators take responsibility for themselves and the future nurses they prepare.

Because those in the nursing profession spend a significant amount of time directly caring for patients from diverse cultural backgrounds, it becomes critical to ensure that nursing programs provide the necessary training to students to support inclusive practices (Morrison et al., 2021). As supported by Murray et al. (2016), "the benefits associated with a diverse health care workforce include improved quality of care, enhanced cultural competence, expanded access to services for minority patients and underserved communities, improved health and health care research, and other societal benefits" (p. 143). In a qualitative study conducted by Green (2020), racially and ethnically diverse students identified several success strategies, such as having academic and financial support, institutional and faculty commitment, positive mentors and role models, and intentional strategies for recognizing and addressing bias. Brown et al. (2021) discovered through a quantitative cross-sectional study examining nursing students' academic success factors that a better understanding of how students learn could help faculty with remediation approaches to support student retention efforts. These findings support the need to evaluate inclusive practices and provide resources to promote student success.

Adequate support services are necessary for nursing programs to employ diversity efforts that support student learning. Brooks-Carthon et al. (2014) identified that a "majority of nursing schools report sharing a commitment to the ideals of diversity, yet only a small fraction of these institutions have implemented structured support services to increase minority student representation" (p. 1103). In a cross-sectional study of twenty-five nursing institutions using race/ethnicity nursing school enrollment secondary data from the AACN, results indicated a significant variation among the types of services to support the recruitment of minority nurses. Furthermore, the results showed that while nursing diversity services are present in several nursing programs, meeting the needs of minority students is complex and often challenging.

Common traits found from a literature review exploring diversity, equity, and inclusion practices in higher education support the need for a firm commitment and collective approach to actively embed diversity, equity, and inclusion into their mission, vision, and outcomes (Barnett, 2020). Barnett also identified that the quality of diverse peer interactions, organizational practices, and the actions of academic leaders and faculty can be complex and context-dependent yet essential for promoting positive educational outcomes. Failing to promote an inclusive and welcoming climate combined with insufficient academic support for student recruitment and retention efforts has been shown to hinder enrollment and graduation efforts (Brooks-Carthon, 2013). As students move from the educational side to the corporate side of nursing, the influence of new policies, roles, responsibilities, and expectations may cause a shift or modification of their personal and professional identity. These changes can be viewed positively, especially with a caring and supportive work environment.

Role Models and Mentors

College brings new opportunities for students to become independent while creating personal and professional identities. Research conducted by Wang et al. (2022) shared evidence to support that the clinical environment significantly affected student empathy levels and supported the formation of personal identity. The Microsystem layer of Bronfenbrenner's model provides a platform to closely examine personal and environmental relationships and their effects on the individual within this environment as these identities are formed. While there is limited research to support the use of the Ecological Systems Model in the CLE of nursing students, Zwemer et al. (2022) identified using this type of model in the medical education setting as a guide for exploring role modeling, mentorship and experiential learning. Bronfenbrenner's

27

model fits well for exploring student experiences within the CLE since they are guided by nurses who serve as role models and are forming their identities as professional nurses.

From a role model perspective, the microsystem provides a lens to explore influencing relationships, and research has identified the critical impact of the professional nurse's role on student learning in the CLE (Wang et al., 2022; Amimaruddin & Ruditaldris, 2022). Described as central to nursing education, Phuma-Ngaiyay et al. (2017) shared that a good student learning environment that supports applying theory into practice depends on qualified nursing staff and educators who assist students with meeting their learning outcomes. A supportive clinical environment guides student learning and competency attainment while facilitating the student-to-nurse transition process (Bent et al., 2005). Within this environment, the role of the nurse preceptor has been regarded as an essential component for supporting student learning while facilitating their entrance into professional practice (Casey et al., 2011; Luckenbach et al., 2021;).

Nurses who act as mentors possess role-modeling qualities (Eller et al., 2014; Foster et al.; Jack et al., 2018), such as being caring, supportive and clear communicators (Hamshire & Jack, 2021). Studies exploring nursing students' perceptions of the nurse who acts as a preceptor in the clinical environment have made explicit connections regarding the importance of having effective role models who support student learning (Rusch et al., 2019; Rook et al., 2022). These essential relationships foster a sense of belonging where students feel respected and valued (Kern et al., 2014). While identifying the importance of effective mentoring relationships, Eller et al. (2014) found a need for more evidence to define mentoring behaviors that support positive nursing student learning experiences. Through an extensive research review process and qualitative discussions with faculty member mentors, Eller et al. identified eight themes

28

describing key components of an effective mentoring relationship: (1) open communication and accessibility; (2) goals and challenges; (3) passion and inspiration; (4) caring personal relationship; (5) mutual respect and trust; (6) exchange of knowledge; (7) independence and collaboration; and (8) role modeling.

Foster et al. (2015) conducted a quantitative study to explore mentorship qualities among nursing students whose experiences occurred in various clinical learning environments. In this study, students identified the importance of having a mentor and wanting their academic university to support the mentoring role better (Foster, 2015). Myall et al. (2008) added to these findings by highlighting that nursing students desire mentors who are prepared for their role by supporting their educational efforts. Gray and Smith (2000) identified that nursing students considered a nurse mentor a vital component of their learning while acknowledging the need to become less dependent upon them as they progressed in their training. "Students quickly become aware of the importance of choosing good role models and learning their mentor's likes and dislikes as they realize this impinges on the outcome of their assessment" (Gray & Smith, 2008, p. 1542).

Evidence supports positive and supportive student mentoring practices; however, studies have indicated that transitioning from nursing student to RN has been stressful and challenging (Kaihlanen et al., 2018). In a qualitative research study by Tehran et al. (2021), nursing students and clinical instructors identified several challenges affecting students' learning in the clinical environment, such as increased nursing staff workload demands, which led to ineffective clinical practices and communication challenges between students and their clinical mentors. In a qualitative study conducted by Raines (2012), responses from thirty-seven nurses who served as preceptors to students indicated that participants felt their role expectations were unclear and did

not feel valued**.** These underlying concepts should remind researchers how essential the environment is to student learning while recognizing the staff nurse's role and any underlying factors contributing to an unhealthy and possibly uninviting learning environment.

Described as central to nursing education, Puma-Ngaiyaye et al. (2017) shared that a good student learning environment that supports applying theory into practice depends upon qualified nursing staff and educators who assist students with meeting their learning outcomes. Higher education institutions are responsible for considering the needs of all student populations they serve (Montenegro & Jankowski, 2017). Furthermore, "clinical learning needs to be effectively facilitated to ensure adequate preparation of nursing students and achievement of clinical competence for entry-level practice" (Puma-Ngaiyaye et al., 2017, p. 164).

Mentorship has been described as pivotal in supporting students' clinical experiences and necessary for preparing them for their role as confident and competent practitioners (Myall et al., 2008). While many factors influence student learning in the clinical environment, several researchers have identified the role of the nurse preceptor in providing students with feedback on their experiences as being essential for supporting how students are meeting their learning outcomes (Barron, 2021; Fink, 2008; Ruesseler & Obertacke, 2011). Despite these known factors, research has identified a shortage of nursing staff and nurse educators as a barrier to providing effective nurse preceptors (Gierach et al., 2019). In a qualitative study of thirty-seven nurse preceptors, several participants indicated their role expectations were unclear and did not feel valued (Raines, 2012). A qualitative study by Tehran et al. (2021) analyzed nursing student and clinical instructor challenges in the learning environment. Results from this study indicated a need for more effective clinical education facilitators, a demand to increase bedside learning, and communication challenges between students and their clinical mentors.

A positive and welcoming environment facilitated by skilled role models assists students with their learning (Anderson et al., 2014; Hendersen et al., 2020). While engaging in these foundational activities and interactive experiences, it has been identified that nursing students want to feel welcomed, included, respected, and involved while engaging in clinical learning activities with staff nurses (Christiansen et al., 2013; Tremayne & Hunt, 2019; Sandvik et al., 2014). Contrary to these desired expectations, research studies support nursing students perceiving clinical experiences as being stressful and anxiety-producing (Casey et al., 2004, 2011; Hosada, Y., 2006; Pai et al., 2017). Anderson et al. (2014) identified that the clinical learning atmosphere could assist or hinder nursing student learning. Nurses who work in the clinical setting have reported feeling stressed and overworked, which could contribute to uninviting behaviors.

Research encourages using models, frameworks, and tools to facilitate student learning in the clinical setting (Gierach et al., 2019; Letcher & Nelson, 2014). Happel (2009) developed a preceptorship model that reinforces the need to "provide a basis for which the complex relationships between individuals and organization can be examined to maximize the value and effectiveness of the preceptorship experience for all stakeholders, student, RNs, universities, and health care organizations" (p. 373). As previously defined by Happel, a preceptor is an experienced, skilled, knowledgeable nursing professional who supports and encourages the educational needs of students.

Within the Model to Support Preceptorship, successful and beneficial learning practices rely heavily on the relationship between the student and professional nurse (Happel, 2009). Happel's Model to Support Preceptorship takes a student-focused perspective of factors influencing clinical learning. Additionally, the model recognizes the healthcare organization's

31

role in supporting and valuing the essential relationship between nursing staff and students. The

Model to Support Preceptorship aligns with the underlying theories for this project with its

student-focused view for recognizing crucial relationships within the clinical learning

environment. Permission has been granted from Dr. Brenda Happel (Appendix A) to use the

model for this research project and to support future research practices (Figure 2.1).

Figure 2.1.

Happel's Model to Support Preceptorship
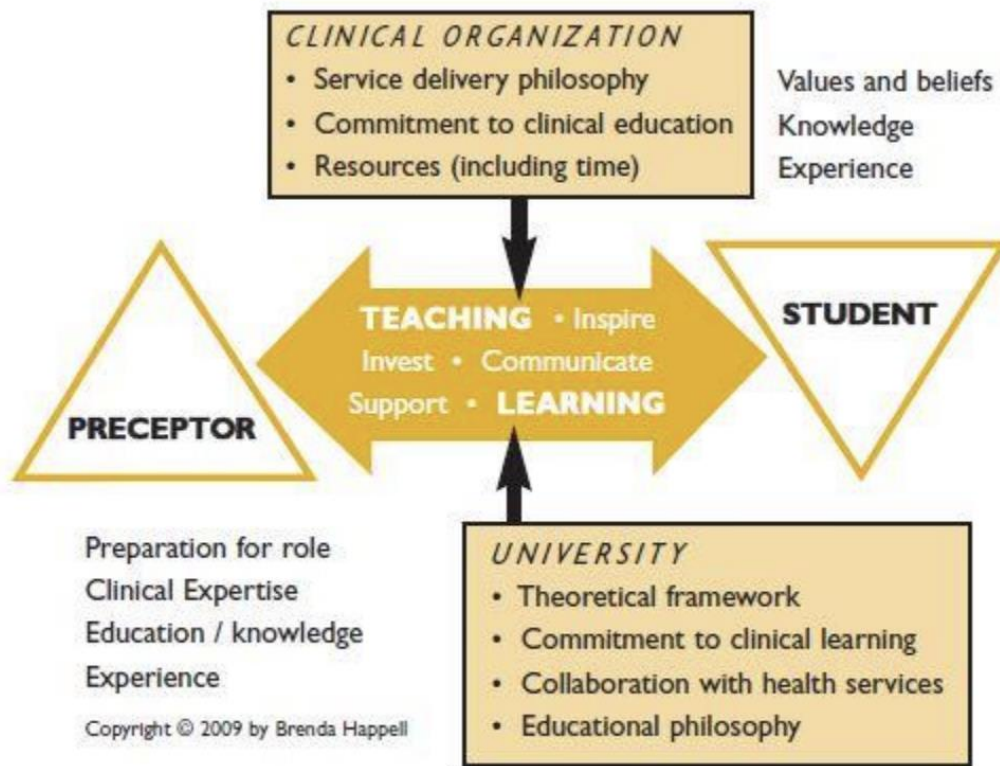
Note: The model is used with permission from Dr. Brenda Happel from published work titled: A
Model of Preceptorship in Nursing: Reflecting the Complex Functions of the Role

A systems-based model can assist professional programs with exploring the interactive effects of learning environments that are influenced by professional expectations. Bronfenbrenner's Ecological Systems Theory model helps explore role modeling, mentorship, and experiential learning while taking a broader approach to identifying how multiple environmental layers affect an individual's personal and professional development (Zwemer et al., 2022).

Mesosystem in Nursing Environments

The mesosystem describes the relational experiences of two or more microsystems (Bronfenbrenner, 1993). "Within nursing education, the mesosystem comprises the linkages and processes taking place between the settings that are important to and affect the developing student" (Hickey et al., 2012, p.5). As students engage in clinical experiences, they are influenced by prior experiences, peer support, school expectations, and hospital organization expectations. Understanding these influencing factors, such as inviting practices, will assist educators in supporting the CLE.

Invitational Theory

One theoretical perspective that has been used broadly from an educational context but rarely applied to nursing education is Purkey's Invitational Theory (IT). Using IT assists with exploring personally and professionally inviting behaviors from a student's perspective. The theory reinforces the need for students to be invited to perceive themselves as learners (Spikes, 1987), and those who facilitate this learning are instrumental in setting the foundation for these perceptions (Finger & Pape, 2002).

Invitational Theory (IT) was developed by William Purkey in 1978 and has evolved as an educational framework based on perceptual tradition and self-concept theory (Purkey & Novak,

33

1996). With perceptual tradition practices, the views and perceptions of others are considered to be unique, and with self-concept theory, one's personal beliefs and values are recognized (Purkey & Novak, 2015; Brown, 2016). Taking a constructivist approach, IT focuses on the learners' perspective of collaborative and engaging processes that occur while putting knowledge into practice (Brown, 2016). Invitational Theory uses the values of care, respect, trust, optimism, and intentionality to describe an optimally inviting environment. As shared by Purkey and Novak (1988), "Just as everyone and everything in a hospital should aid in the promotion of health, everyone and everything in schools should invite the realization of human potential" (p. 20).

An inviting learning environment should be grounded in mutual respect and intentional positive actions (Purkey & Novak, 1988; Purkey et al., 1990). The concepts within IT emphasize the importance of examining and recognizing intentional and unintentional practices from a personal and professional level (Purkey, 1988). According to Purkey and Stanley (1991), the behaviors of those in a dominant position to teach students can be intentionally inviting, intentionally disinviting, unintentionally disinviting, or unintentionally inviting. If nursing students perceive nursing staff as inviting through positive, respectful, and trusting behaviors, their environment will be more conducive to learning (Hodges & Kuper, 2012). Alternatively, receiving uninviting support, such as being ignored, may produce negative consequences for student learning, which could also reflect poorly on the clinical agency where these experiences occur. From an intended and inviting personal and professional perspective, guidance provided to the student should be supportive, affirming, encouraging, and come from the point of interest.

Within the constructs of IT, one's potential is developed through five environmental factors called the 5 P's: people, places, policies, programs, and processes (Pukey & Novak, 1996). Invitational Theory looks at inviting behaviors or processes among the people facilitating

34

learning, where learning occurs, the practices and guidance provided by programs, and policies supporting organizational functions (Purkey & Novak, 1984; 1988). According to Purkey and Novak, the theory's underlying assumptions follow the principles that people are individuals who should be respected and treated well, collaborative and cooperative activities are essential for education, all aspects of the learning environment support an individual's untapped potential, and this untapped potential is influenced by intentionally inviting behaviors. An intended and inviting professional perspective embraces the importance of collaborative practices while providing guidance (Finger & Pape, 2002).

While the foundation of IT was initially applied from a school system education perspective, its underlying concepts have contributed to several other disciplines where student learning takes place. Within the profession of nursing, IT has been used to explore student perceptions of inviting behaviors in the clinical environment. Finger and Pape (2002) used IT to examine relationships between nurse preceptors and preceptees in a perioperative setting. In this study, nursing students enrolled in an elective course received IT content and engaged in clinical practice with a clinical instructor. Following their experiences, they completed an IT outcomes survey to evaluate their clinical learning experiences. Results from this study supported inviting practices as contributing to positive student learning outcomes. Invitational Theory has also been used to explore nursing students' perceptions of their classroom and clinical prelicensure learning environments (Watts & Hodges, 2021). In a study by Watts and Hodges, students defined intentionally inviting behaviors from faculty, staff, and peer role models as being "professional, relatable, easy to have a conversation with, knowledgeable, and approachable" (p. 367). By examining nursing students' perceptions of inviting learning environments, researchers

can better understand best practices that can be used to reinforce and support positive learning experiences.

An inviting environment is created through the concepts of trust, respect, optimism, and intentionality (Purkey & Novak, 1998). Invitational Theory reinforces the importance of examining how mentors' influences can support or impede student learning within their learning environments. During clinical experiences, trust and respect can be established between a mentor and mentee through cooperative and collaborative practices that support optimal learning. These intentional practices that optimistically support trust and respect create a positive learning environment (Purkey, 1992). Suppose students perceive the interactions with staff members during their CLE as uninviting. In that case, clinical agencies might want to investigate why this is happening and take steps to correct these perceptions, which could lead to better support for nursing staff in this role.

Invitational Theory recognizes that individuals continually evolve while engaging in the process of being and becoming (Purkey & Stanley, 1991). This evolution occurs for nursing students while engaging in practices, such as clinical learning experiences that prepare them to become professional nurses. "The key purpose of clinical placements is to facilitate students' learning and progress toward the attainment of competence, which requires personal commitment and active involvement of students; support and guidance of clinical and academic staff; and clinical environments that are welcoming and inclusive of students" (McCoy et al., 2013, p.15).

From an intended and inviting personal perspective, guidance provided to the student should be supportive, affirming, encouraging, and come from the point of interest (Purkey, 1998). Furthermore, many aspects within the clinical environment, such as lack of supervision,

36

trust, and poor interpersonal communication between students, nurses, doctors, and patients, may prevent a conducive learning environment (Amimaruddin & Ruditaldris, 2022).

The defining traits and concepts of IT align directly with exploring how students perceive the role of a staff nurse as a mentor and role model during their clinical learning experiences. Student perceptions of inviting mentoring best practices, such as feeling included, welcomed, respected, and guided, might also be influenced by other factors, such as the number of clinical experience hours, the quantity of staff nurse mentors, or pre-existing educational training related to the type of nursing program they are enrolled in. With nursing students indicating that they value a supportive and welcoming environment (Blegen et al., 2015; Wong, 2021), it becomes essential for educators to closely examine all factors that come into play. Each clinical learning experience is unique, further directing the need to closely examine how students perceive their interactions and experiences with their nurse mentors. Many factors impact student learning; therefore, a student-centered approach to better understand educational practices will provide those with a vested interest in student learning with valuable information to support the learning environment.

Exosystem in Nursing Environments

The next extending exosystem layer is described by Renn and Arnold (2003) as "a setting not containing the individual that nevertheless exerts influence on their developmental possibilities" (pp. 271-272). New processes are developed as students engage within the mesosystems of personal experiences and into the exosystem, which is full of indirect influences such as rules, policies, and standards for engaging in safe practice. Clinical learning experiences are a core component of nursing education and are intentionally designed for nursing students to gain confidence with specific skill sets such as collaboration, communication, delegation, and

prioritization (AACN, 2022; Kaihlanen et al., 2018). Within the CLE, students are influenced and motivated by what they see, hear, and other associated behaviors within the exosystem during clinical experiences.

The nursing workforce shortage is an example of an indirect influence that affects students, nursing programs, and employers. From an education standpoint, ensuring student completion and success is critical and is often perceived as a direct reflection of the quality of a nursing program. Nursing student and program success is not solely measured by ensuring students complete a required curriculum and obtain a BSN degree. Students must also pass the National Council of State Boards of Nursing (NCSBN) licensing examination. (National Council of State Boards of Nursing [NCSBN], 2020) and cannot legally practice as a RN until they have passed this requirement. As supported by Daley, Kirkpatrick, & Frazier (2003), "successful completion of national licensure examinations is a key outcome for nursing graduates, as well as an important and highly visible indication of effective nursing programs" (p. 390). "The impact of students' inability to pass the board examination is profound when considering the availability of optimal care and access to care within our society" (Cosper et al., 2023, p. 2).

Macrosystem in Nursing Environments

The macrosystem layer influences students from a broader context in that it influences and is influenced by the other systems (Bronfenbrenner, 1993; Loh et al., 2018). When students engage in clinical experiences, they are introduced to a different organizational atmosphere governed by new policies, procedures, and expectations while bringing their own thoughts and perceptions. Nursing students may not consider themselves as a part of the workplace environment; however, they can be influenced by others in this environment. Furthermore,

experiences at this level may impact professional and career development pathways (Hickey et al., 2011).

Student learning extends beyond graduation as they transition into the professional nursing role. While exploring the learning experiences of graduate nurses, Casey et al. (2004) identified through survey responses and qualitative interviews that lack of support and poor communication among healthcare team members hindered nursing students' transition from student to professional nurse. With the creation of the Casey-Fink Graduate Nurse Experience Survey, a unique perspective was taken to focus on continued learning with skill performance and knowledge in the clinical environment. The Casey-Fink Graduate Nurse Experience survey is one of the most globally used and validated instruments exploring graduate student experiences. The survey supports students' perspectives in the learning environment while providing employers with information to monitor mentoring practices (Casey et al., 2004). Exploring these influencing social setting factors opens opportunities to examine their impact on student learning.

Culture

A systems-based approach such as Bronfenbrenner's Ecological Systems Theory assists with examining the many relationships and interactions that influence the culture and climate of the student learning environment. The culture of an educational setting has been described as "a dynamic system of values, beliefs, and behaviors that influence how people experience and respond to the world around them" (Guo & Jamal, 2007, p. 29). Additionally, within the context of a college environment, cultural considerations related to gender, race, and ethnicity come into play within the outermost macrosystem layer (Renn & Arnold, 2003). While the constant social

interactions of all these elements from within the climate, the ongoing development of rules, beliefs, structures, and practices further define an organization's culture (Suspitsyna, 2011).

The culture and climate of a student learning environment can positively or negatively impact the actions of others (Hurtado et al., 2008), and dominant classroom traditions and instructional practices have been recognized as affecting students' comfort levels in the learning environment (Gup & Jamal, 2007). As a result, personal attributes such as skill and confidence levels, relationships with all those involved in the student experiences, and environmental factors such as an organization's culture should be considered when examining student outcomes (Astin, 2012). Closely examining the relationship between students and the environment and how these relationships contribute to the overarching culture provides researchers, leaders, and educators opportunities to understand student perceptions while providing a conducive learning environment.

Chronosystem in Nursing Environments

The outermost and broadest chronosystem layer recognizes the environment as dynamic and ever-changing. Change will occur in response to environmental transitions and affect an individual's needs and development (Zwemer et al., 2022). As supported by Keeling (2007), "transformation often begins with institutional self-assessment, a process that engages practitioners' critical self-reflection as to current practices, cultural expectations, and existing communication and collaborative pathways" (p. 24). While adopting the Ecological Systems Theory approach for exploring the impacts of change with medical educators, Zwemmer et al. identified this model's usefulness in studying the effects of relationships, guiding plans, and promoting change efforts.

Change

  Student learning evolves through constant contact with ever-changing and transforming environments. While exploring change efforts related to cultural diversity in higher education, Guo and Jamal (2007) examined three commonly used change models: the intercultural education model, the multicultural change model, and the anti-racist model. Within these models, Guo and Jamal (2007) identified that the individual diversity development model is most often used as a faculty guide to provide reflective practices of attitudes to further support and promote the development of diversity in others. The multicultural education model moves from guiding the reflection of oneself to guiding efforts in the teaching and learning environment. The anti-racist model builds even further on the previous theories by providing a more critical and higher-reaching approach to nurturing cultural diversity in higher education. As further defined by Guo & Jamal (2007), "the model encompasses four learning objectives for both faculty members and students: (1) integrating multiple centers of knowledge, (2) recognition and respect for difference, (3) effecting social and educational change: equity, access, and social justice, and (4) teaching for community empowerment" (p. 41). Overall, these efforts to better explore inclusive practices in education support the need to challenge assumptions, recognize inequities, and support respectful and meaningful change practices.

  Helping students understand the processes behind change through a social cognitive lens can assist with preparing to transition into the professional nurse role. "Social cognition refers to how people understand events and the factors that affect their understanding" (Bartunek et al., 1992, p. 205). The social cognition model supports a better understanding of why change may occur or needs to happen while addressing how people create meaning of change (Kezar, 2018). While using the social cognitive theory, Kezar identified the need to reinforce how to make sense

41

of a situation so that all key stakeholders understand the value behind why change needs to take place. Change occurs when people are motivated to eliminate dissonance by altering their actions, attitudes, and ideas (Kezar, 2001). In the CLE, instructors and nurses assist with sensemaking by being knowledgeable and involving students in the learning process. A sensemaking approach that builds upon a supportive organizational culture creates a solid foundation for encouraging equitable teaching and learning environments. Communities of practice that share a concern or passion for what they are doing or learning should be recognized as essential partnerships for acknowledging the need for and facilitating change. As students are immersed in an ever-changing healthcare environment, the fundamental process supporting change becomes vital. By examining the learning environment and the changes within them through self-reflective practices, peers and mentors can help others understand how and why change occurs.

Bronfenbrenner's Ecological Systems Theory Summary

In summary, the theoretical model for this project takes a systematic approach to explore the aspects of an inviting, caring, and supportive student learning environment while simultaneously exploring the systematic and synergistic exchange between the student and staff nurse within this environment. Bronfenbrenner's theoretical framework identifies the CLE as critical in developing students into professional nurses. The Ecological Systems Model provides a foundation for looking at influencing factors and relationships within a specific learning environment and how they affect student and program outcomes (Hopson et al., 2014). A systems-based approach will assist nursing programs with understanding how environmental factors influence student behaviors while supporting future change efforts (Hopson et al., 2014; Kezar, 2018).

<center>**Current Surveys for the Clinical Nursing Environment**</center>

Fowler (2014) suggests that researchers examine survey question design, sampling size, and frame to support survey data quality. DeVellis and Thorpe (2021) encourage researchers to review survey items carefully and not assume that developed scales are carefully constructed or designed to explore a common cause or consequence. As supported by Bijani et al. (2021), "a purposeful study of reflection on clinical practice requires an instrument which makes an accurate assessment of reflection skills possible" (p. 2). These guidelines set the foundation for examining the following survey instruments.

Clinical Learning Environment Inventory (CLEI)

Research database reviews indicate that the most frequently mentioned survey tool for gaining perspectives on nursing students' clinical environment is the Clinical Learning Environment Inventory (CLEI). Search results indicated that the CLEI had been translated and used by several countries over the past few decades, making it the most common and widely used international tool for exploring nursing students' perceptions of their CLEs. The first version of the CLEI was developed by Dominic Chan in 2001 and consisted of 42 items measuring six constructs: individualization, innovation, involvement, personalization, task orientation, and satisfaction. The survey was administered to 108 nursing students in Australia who were in their second year of nursing studies, with a response rate of 67.5%. While developing the CLEI, Chan (2001) took a psychosocial, educational perspective toward developing the tool to measure actual and preferred student satisfaction with placement in the CLE.

While some researchers have criticized the CLEI for not focusing on identifying connections between student involvement and clinical experience success (McCoy et al., 2013),

<center>43</center>

its frequency of use across the globe supports its usefulness for specific contexts. The instrument was initially tested in Australia and has been translated and used by several countries over the past few decades, making it the most common and internationally used tool for exploring nursing students' perceptions of their CLEs. Furthermore, the CLEI has been administered to students enrolled in different types of nursing programs, including Associate, Bachelor, and Master's degree programs. In a study conducted by Chan et al. (2018), responses were obtained from 259 nursing students enrolled in either a Bachelor's or Master's nursing program and engaged in hospital-based clinical practices at one hospital in Hong Kong. Within this study, the survey was evenly distributed among both types of nursing student populations, and there was no reported significant difference in survey responses within each group. While this study supports using the CLEI as an effective comparative tool among different types of nursing degrees and demographic characteristics, additional testing is recommended to endorse these findings.

The CLEI is the most common and widely used tool for exploring student perceptions of their CLEs, with several research studies supporting the international use of the instrument. Varying responses from students indicated different perceptions of clinical experiences related to progression within the academic program and different types of clinical experiences. (Shivers et al., 2017). While one of the strengths of the CLEI is that it has been used internationally and versions of it have been validated many times, an identified limiting factor identified by researchers is the length of the tool. Subsequently, shorter versions measuring select constructs of the original CLEI instrument have been developed and validated consistently throughout the literature (Salamonson, 2011) to support this tool's effectiveness in measuring its identified constructs.

It is important to note that several limitations have been pointed out with the CLEI. First, the original survey only used Cronbach's alpha to estimate internal consistency and mean correlations for discriminant validity. The Cronbach's alpha coefficients for the CLEI ranged from 0.73 to 0.84 for the Actual form and 0.68 to 0.80 for the Preferred form, supporting adequate internal consistency (Chan, 2001). Using Cronbach's alpha as the only statistical data limits validity claims. Expanding statistical analyses would have provided more evidence to support the instrument's validity. Furthermore, future studies conducted by the author did not demonstrate the use of survey validation methods such as expert-focused groups or test-retest measures. Selective sampling of only second-year nursing students was chosen for the initial validation process to describe an appropriate student population and to suggest capitalization of abilities; however, there was no precise statistical analysis to validate this finding. Additionally, demographic information was limited to the student's level of education, which further diminished the tool's ability to be generalizable to other populations.

Although the original CLEI lacked statistical significance to support reliability measures, additional studies have been used to support this tool as a reliable and valid instrument. After identifying a lack of evidence to support structural validity, Hudacek et al. (2019) tested the psychometrics of the original 42-item CLEI using Exploratory Factor Analysis (EFA) methods from 311 nursing student responses (Hudacek et al., 2019). Furthermore, Kaiser–Meyer–Olkin (KMO) testing results supported acceptable sampling adequacy. Results from the analysis supported the removal of ten items and the renaming of several factors. The testing of this instrument suggests that the item content should be evaluated and revised to ensure ongoing, consistent findings to support validity and reliability measures.

A considered strength of the CLEI is that it has been used in the US and internationally, and versions containing original validated questions have been studied to support the validity and reliability of the instrument. Subsequent use and testing of the CLEI by several other researchers have attempted to duplicate similar student sample populations from the original analysis findings while lending support that the CLEI is a reliable instrument (Chan, 2004; Newton et al., 2010; Lovecchio et al., 2015). One limiting factor that has been noticeably listed in several research studies is the reference to many survey items. Salomonson et al. (2011) created an abbreviated 19-item CLEI instrument in response to this perceived item number length barrier. Rather than including all six constructs from the original tool, the modified CLEI-19 focused on two factors: student satisfaction and personalization. Designed as a validation study, the CLEI-19 was tested through results obtained from 231(87% response rate) nursing students enrolled in their first, second, or third year of nursing courses. Descriptive statistics, including Principal Component Analysis (PCA) and Cronbach alpha reliabilities, supported measure usefulness for exploring nursing student perceptions of their clinical learning experiences for the two supporting factors in the tool. Additionally, levels of internal consistency of the CLEI-19 were higher than those reported with the original CLEI instrument. Findings from this study support using abbreviated survey tools to measure specific constructs. Furthermore, it demonstrates the need to validate surveys if any modifications to an existing previously validated tool are made. This validation study supports using parts of a current tool to answer specific research questions. After testing the CLEI-19, the analysis further supports this modified version as a valid and reliable tool for the studied population (Salamonson et al., 2011).

The CLEI and its modified CLEI-19 version have been widely used to evaluate nursing student CLE perceptions worldwide for over two decades. The CLEI is unique because it offers

two versions, one for measuring students' actual perceptions and another for students' preferred perceptions of the hospital learning environment (Chan, 2004). While researchers have identified several areas for improvement with how the original CLEI instrument was developed, subsequent validation studies using the original CLEI and modified versions have made firm conclusions in clarifying what the survey items are measuring. Additionally, while sampling size was cited as a limitation in the original version, participant response rates were consistently adequate. Overall, validation studies for both the original and modified CLEI's frequency of use and global distribution indicate that the CLEI is a valuable resource for the parameters it measures.

Student Evaluation of Clinical Education Environment (SECEE)

A survey instrument titled Student Evaluation of Clinical Education Environment (SECEE) was developed by Kari Sand-Jecklin (2009) to recognize the importance of assessing the quality of student clinical learning experiences at various types of locations. Sand-Jecklin created the survey instrument to highlight that national and international clinical sites offer different learning environments and varying learning opportunities. The original thirteen-item instrument was created in 1998 to explore nursing student experiences with the nursing instructor, nursing preceptor, and CLEs in the US. Sand-Jecklin et al. (2022) highlighted the importance of having a tool designed to recognize that the practice environment, nurse roles, responsibilities, and workloads vary across countries and cultures. The survey's constructs include instructor facilitation of learning, preceptor facilitation of learning, and learning opportunities. After performing an inventory analysis, a second version was created with 29 items. The last two versions used pilot studies, Cronbach alpha for reliability measures, and confirmatory factor analysis to support three subscales. Research findings supported positive

47

Cronbach alpha ratings, which ranged from .89 to .94 with subscales from .74 to .87. A copy of the fourth and most recent revised version of the SECEE, which is in the process of being publicly available, was obtained from Sand-Jecklin in March of 2023. Psychometric testing of this version included a retrospective analysis of 2,792 nursing student survey responses completed between 2016 and 2019. A strength of this survey is that the population parameters were purposely determined and reviewed to categorize responses by CLEs. This purposeful examination of the sample and subsample of the population supports internal consistency measures (Taber, 2018). Reliability coefficients for the three SECEE subscales were .92 and above, and exploratory factor analysis indicated strong loadings of all selected items on the pre-identified subscales, supporting a reported 71.8% total score variance. Overall, the fourth version of the SECEE provided substantial evidence to support this instrument as being a reliable and valuable tool in many types of clinical environments within the US.

The SECEE is an instrument that was "developed to provide information about the quality of the student CLE to assist clinical agencies, nursing faculty, and administrators in selecting clinical sites that best promote student learning" (Sand-Jecklin, 2009, p.44). The tool was an attempt to reflect typical nursing student experiences in the US. According to Sand-Jecklin, the SECEE focuses on the role of the nursing instructor, the nursing preceptor, and the learning environment. While the SECEE takes a nationally student-focused approach to gaining information about the CLE, research has indicated a need to revise further and validate the instrument. Since its origination, the SECEE has undergone three revisions. Each revision has undergone extensive statistical testing to support the instrument as a reliable and valid instrument.

Clinical Partnership Performance Survey

The clinical partnership performance survey (CPPS) is a twenty-three-item instrument referenced as a modified version of an unnamed tool created to measure how students perceive guidance from their nurse preceptors in the clinical setting (Masruroh et al., 2018). Responses to the CPPS were obtained from 53 senior nursing students enrolled in one nursing program in Indonesia. While examining steps taken to create and test the CPPS, several errors were found warranting the use of this survey instrument. To begin, there is no evidence to support the types of instrument modifications the researchers took. While the author acknowledges the creator of the original tool used for modifications for this study, a thorough database search could not locate the original survey tool. Another concern relates to the psychometric testing of the instrument. The survey results were displayed as response percentages and grouped into good, fair, or low categories. There was no justification for how the categories were developed or how the strength of response percentages was obtained. The researchers listed a Cronbach alpha of 0.91; however, survey errors in the survey statement structure counteract a claim for this to have strong internal consistency. The structure of survey items was another area of concern, with several survey items containing double and triple-barreled statements that should have been written as stand-alone statements. Additionally, since items were translated and reformatted, there were unclear terms, such as "student competency targets" and "guidance topics," that the survey respondents could perceive as confusing or misunderstood. While the authors of this revised instrument stake claims for the revised CPPS to be a reliable and valid instrument, more evidence is needed to substantiate these claims. It is suggested that additional survey methods, such as an expert panel review, preliminary pilot testing, and further psychometric testing occur before reliability and validity claims can be made.

Preceptor Evaluation Tool (PET)

Designed in 2015 by Blegen et al., the Preceptor Evaluation Tool (PET) is another nationally recognized survey instrument for new graduate nurses to evaluate their experiences with nurse preceptors in the CLE. The PET consists of 23 statements exploring student perceptions of preceptor responsibilities and actions within the clinical environment. (Blegen et al., 2015). The PET was designed using statements from two previously validated research instruments. Subsequent testing included exploratory factor analysis to identify item fit and Cronbach's alpha (.969 and .862) to support validity measures. Research describing the use of the PET in recent practice is limited; however, the reported statistical testing results from earlier studies suggest that the tool is reliable, valid, and appropriate for exploring nursing students' perceptions of being supported by staff nurses in the clinical environment. Because hospital practice environments are ever-changing, additional studies should be conducted with the PET to ensure continued reliability and validity measures.

Reflection on Clinical Practice Questionnaire for Nursing Students

Bijani et al. (2021) used an exploratory-sequential mixed method design to develop a 36-item survey scale exploring student perceptions of their clinical practice environment. After obtaining qualitative feedback from students, faculty, and nurse administrators through qualitative methods, the researchers identified themes to support the underlying survey variables. The steps of survey development included generating items, performing additional literature reviews, and testing psychometric properties. Interviews with undergraduate nursing students, nursing professors, and literary editors supported the tool's face validity, while content validity was established through an expert panel of nurses who reviewed grammar, ambiguous items, item placement, and type of response scale. With this being a new survey instrument,

50

Exploratory Factor Analysis (EFA) was used appropriately to explore initial underlying patterns in the data set (Knetka et al., 2019).

While the initial steps for creating the survey scale aligned with expected development guidelines, several areas must be explored further. First, the researchers identified a sample of 360 nursing students but needed to indicate what type of clinical experiences they had engaged in or what year of studies they were in. This information is generally essential to have when evaluating response errors. Reliability measures were tested by measuring internal consistency with Cronbach's alpha and test-retest reliability. After administering the survey to 360 nursing students, a recorded Cronbach's alpha measurement of 0.84 was used to support adequate internal consistency measures (Bijani et al., 2021). A cause for concern with this reported measurement is that it is unclear if researchers defined the terminology associated with the identified latent variables during the survey item development process. For example, the constructs of a "challenging situational clinical situation" and "dynamic organizational atmosphere" can imply many meanings. Additionally, 15 of the 36 items contained double or triple-barreled questions. Some examples of these types of questions include: "I try to keep my academic knowledge and clinical skills up to date," "I feel responsible for solving my patients' problems and relieving their pain," and "I am not afraid of encountering difficult clinical situations and performing complex procedures." Several survey items also contained unclear and somewhat confusing statements, such as: "Clinical behaviors contrary to the principles of patient care make me reflect on clinical practice." As supported by Taber (2017), "acceptable value of alpha may be reported even when an instrument includes items of high difficulty that few students can correctly answer or items that are considered to be only loosely related to each other" (p. 1284).

Bijani took initial steps to support suitable measures for creating a valid and reliable instrument. Although researchers reported that their developed survey scale was reliable and valid, with supportive Cronbach's alpha and intraclass correlation coefficient (ICC) scores suggesting the same, an examination of written survey item questions calls these findings into question. Overall, results from this survey reinforce the need to closely examine all properties of the instrument development process, such as sufficient pilot testing and psychometric analysis, before verifying and supporting claims of validity and reliability.

Surveying Students in Nursing Experiences Summary

Several key takeaways have been found within this snapshot review of existing instruments. One limiting factor includes survey item statement clarity and readability. Two of the survey instruments reviewed contained double and triple-barreled statements with words or phrases that were either ambiguous or difficult to interpret meaning. Using more than one describing element within the stem of the statement could potentiate confusion among its readers. With survey instruments being created across many geographical locations, it is easy to see how words and phrases could be "lost in translation." While the nursing profession is uniform in its essence of caring and required knowledge factors, wording and the meaning of statements vary as a reflection of where they originated. While reviewing other instruments that were translated to English from another language, it was often noted that the sentence structure was unclear. As a result, when translated from one language to another, some survey statements may have lost their true intent or meaning or may be misunderstood by the reader. Geographical and culturally based terminology, such as the European term "ward," which is synonymous in the US with an inpatient hospital location, and "theater," which is synonymous with the US term operating room. Additionally, some words and sentence structures were unclear, suggesting

misinterpretations that can occur through the translation process. For this reason, researchers must take a critical look at how survey statements are structured and the multiple meanings behind words.

Several reliable and valid survey instruments used in nursing research were reviewed to explore their use in practice. Findings from this process indicate that researchers share similar characteristics and definitions of the CLE and descriptive qualities with those who guide and support student learning within this environment. While defining attributes of the CLE and the nurse's role within this environment were relatively consistent, survey tools designed to explore student perceptions within these areas varied. The variation of survey tool instruments suggests that no "one size fits all" survey instrument exists.

Guiding Frameworks for Survey Design

Survey instruments have been used as a way to gather information from large populations (Cohen et al., 2018). Applying survey methods is one way to take a student-focused approach to obtaining feedback to understand specific learning experiences better. For a survey instrument to be valid and reliable, it must be well constructed and measure what is intended. If survey instruments are poorly designed, difficult to comprehend, or not validated with adequate psychometric analysis, the results will fail to provide credible and usable evidence. This section of the literature review incorporates essential components of survey instrument development from DeVellis (2012) and Russell (2023). Understanding these necessary survey development steps provides a foundation to support collaborative survey design practices outlined in the study methods section.

DeVellis's Steps for Survey Creation

Survey instrument scales are a "collection of items combined into a composite score intended to reveal levels of theoretical variables not readily observable by direct means" (DeVellis, 2012, p. 11). Surveys can be a valuable tool if they are appropriately designed. DeVellis (2003, 2017) outlined eight steps to guide instrument development, which include determining clearly what is intended to be measured, generating an item pool, the format for measurement, having the initial item pool reviewed by experts, and considering the inclusion of validation items, administering items to a development sample, evaluating the items, and optimizing scale length. Engaging in these steps supports item construction by decreasing errors resulting from poorly constructed or misguided questions (Fowler, 2014).

Step 1: Determine Measurement Intent

The survey development phase should begin with first understanding what the instrument should measure (DeVellis & Thorpe, 2021). Before an instrument can be deemed valid and justifiable for continued use, the purpose must be clear, and the constructs must be developed well (Russel, 2022). Understanding the why behind the research question supports the development of survey items by providing focus and direction. Thoughtful and thorough planning of research steps ensures alignment with its intended purpose (Cohen et al., 2018).

Step 2: Develop an Item Pool

When creating an item pool, the quantity, type, and quality of items should be considered. Item pool construction from the standpoint of clarifying the latent variable ensures that there would be enough correlating survey items to make statistically significant inferences. (DeVellis, 2003; Messick, 1995). The items within a scale's properties should intentionally reflect the underlying construct, and multiple items measuring the same construct will produce more

54

reliable results (DeVellis & Thorpe, 2021). Furthermore, constructing questions that are suitable measures should be the result of purposeful and careful design (Fowler, 2014).

In addition to finding adequate survey items, the number of survey items should also be considered. Knetka et al. (2019) believe variables that are not directly observable, such as survey responses, should use more than one observable variable to represent the construct. There has been much debate regarding how many scale items should be included in an initial item pool (DeVellis & Thorpe, 2021; Cohen et al., 2018). Researchers have implied that a larger sample size represents more generalizable results (Boateng et al., 2018; MacCallum et al., 1999; Guadagnoli & Velicer, 1988). In describing Rasch analysis methods, Chen (2013) suggested having at least 100 survey sample responses to provide robust item parameter estimates. Boetang et al. (2018) further support larger sample sizes provide more stable factor loadings, which lead to more substantial generalizability claims.

Although a precise item pool ratio is not clearly defined, Nunnally (1978) suggests having at least ten participants for every scale item. Conversely, in a study by Gargon et al. (2018), a higher number of survey items was associated with lower response rates. After reviewing 30 studies containing between 8 and 148 survey responses, multilevel linear regression analysis with a coefficient for number of items of -0.14 indicated that for every 10 items, the response rate dropped by 1.4 percentage points. Although some of the literature recognizes that more survey items tend to produce more reliable results and internal consistency, researchers identify that it is impossible to know precisely the number of items that should be included in an item pool (Boeteng et al., 2018; DeVellis & Thorpe, 2021).

Step 3: Select Measurement Format

After survey items have been selected, the next step in scale development includes selecting the measurement format. The format for measurement, such as the type of response scale and survey distribution method, should be considered during any survey development process (DeVellis & Thorpe, 2021). "With so many research studies utilizing survey research methods, it is increasingly important that survey instruments function the way they are intended and measure what they claim" (Bradley et al., 2015, p. 1).

The Likert scale was developed in the 1930s as a way to provide a series of related statements focusing on a specific area of interest or construct (Alabi & Jelili, 2023; Likert, 1932). Psychometric scales such as the Likert scale have been used to measure psychological constructs, allowing respondents to indicate opinions or attitudes about a particular subject area or issue (Bond & Fox, 2007; Nemoto & Beglar, 2014). Additionally, Likert scales have been particularly useful in the social sciences for attitude and self-efficacy scores (Chyung, 2017; Croasmun & Ostrom, 2011). Alabi and Jelili (2023) identify the Likert scale as a statistical magical wand for attitudinal surveys. When using the Likert scale, "the real issue is not between analytical techniques, but in properly understanding the nature of the analyses, and the resulting inferences" (Pell, 2005, p. 970).

When using a Likert scale, researchers need to be cognizant of who their audience is and the type of and number of response options to provide. Some researchers suggest using positively and negatively worded item statements to reduce selection bias (Maeda, 2013; Soto et al., 2008), whereas others perceive negatively worded items promote confusion with how to answer (Barnette, 2000; DeVellis, 2003; DeVellis & Thorpe, 2021; Herche & Engelland, 1996;

Swain et al., 2008). Wolfe and Smith (2007) recommend that items be written in a single, preferably positive direction.

Likert scales can vary in the number of response options. While Likert rating scales have been acceptable for measuring psychological constructs, there is no clear guideline regarding the number of items to include (Simms et al., 2019). Using a neutral option within Likert response scales has also been highly debated (DeVellis & Thorpe, 2021; Bradley et al., 2015). Commonly referred to as 'forced response items,' Likert scales with an even number of response options without a neutral option force respondents to choose an agree or disagree option (Chyung et al., 2017; Willits et al., 2016). In contrast, a neutral option has been used to make respondents feel comfortable and not committed to answering (Bradley et al., 2015; DeMars et al., 2004). "Neutral response options do not affect all surveys equally, and therefore, a single method for working with neutral response options is not generalizable as researchers need to consider the survey construct" (DeMars & Erwin, 2004, p. 83). Respondents could choose a neutral option for several reasons, and this option choice has also been scrutinized for its ability to be used for interpretation. Some researchers suggest that respondents may choose a neutral choice as a "dumping ground" for not wanting to answer a particular question (Young et al., 2017). Choosing a midpoint or neutral option could represent unfamiliarity with the question or that the respondent does not have an opinion or is not interested. (Bradley et al., 2015). Additionally, choosing a neutral option could indicate not wanting to choose an undesirable choice.

A neutral option is suggested for interval scales to support statistical analysis purposes. In a study using the Rasch model to assess instrument quality and rating scale structure, Bradley et al. (2015) indicated that "when a response such as "neutral" or "not sure" is inserted into the middle of the scale between disagree and agree, it can no longer be assumed that the categories

are arranged in a predetermined ascending or descending order" (p. 3). A neutral opinion assumes that the respondent is knowledgeable of the topic being researched and has considered it, and the response falls roughly center between the two endpoints (Chime & Russell, 2009; Chyung et al., 2017). Kulas and Stachowski (2009) identified a tendency to "endorse the middle category with an 'it depends' response orientation, suggesting that conditional response interpretation of the category may be more common than the moderate-standing interpretation and use" (p. 492). When there is an assumption that the anticipated survey audience should be knowledgeable of survey item content, a trend with respondents choosing a neutral option warrants further review and may assist with improving the clarity of survey items.

Step 4: Review Item Pool by Experts

An expert panel consists of individuals who are knowledgeable about the research subject, scale processes, and population being studied (DeVellis, 2017; Fowler, 2014; Kraines et al., 2020). An expert review process provides opportunities to define concepts and ensure items are relevant to support the scale's construct and face validity (Boeteng et al., 2018; DeVellis, 2003). Unidimensionality, which is the idea that a set of items measures a single construct, is vital because it is difficult to interpret the results of items measuring multiple constructs (Nemoto & Beglar, 2014).

Some item pool review processes, such as Delphi methods, have been identified as a way to have a group of experts anonymously clarify topics and generate ideas to support survey construction (Kloser, 2014). In a study by Jaam et al. (2022), a Delphi expert panel review provided feedback and suggestions for survey item modifications related to pharmaceutical practices. Results from the study support choosing an expert review panel that effectively contributes to the topic with quality feedback before piloting survey questions to ensure face and

content validity. While recognizing that being a part of an expert panel review takes a considerable amount of time and may introduce bias, the Delphi technique has been considered for its ability to clarify best practices while not being influenced by other panel members (Davidson, 2013).

Modified Delphi expert panel review processes, including in-person or online correspondence, have been used to contribute ideas and opinions to support survey development. Kraines et al. (2020) used an adapted in-person expert panel Delphi approach to define mindfulness-related experiences. Expert panel feedback was used to clarify operational definitions to inform future practices by conducting in-person meetings and online survey reviews. These types of methods support the need to take a collaborative approach to survey item development, especially when a new tool is being created or an existing tool is being modified.

Step 5: Explore the Use of Validated Items

Creating a new survey instrument entails a significant amount of time and attention to detail. To not "reinvent the wheel," researchers often use previously validated and well-designed survey instruments to provide evidence to support specific research questions. Exploring and critiquing potential survey instruments for use or contributing to the item pool selection ensures survey instruments are constructed well, and that reliability and validity measures are conducted and accurately reported. Over the past few decades, various instruments such as the Clinical Learning Environment Inventory (CLEI), Student Evaluation of Clinical Education Environment (SECEE), Casey-Fink Graduate Nurse Experience Survey, and Preceptor Evaluation Tool (PET) have been used in research to explore nursing student perceptions of nursing staff who serve as preceptors during clinical learning experiences (Casey et al., Chan, 2004; 2011; Fink et al., 2008; Sand-Jecklin, 2009; Wang et al., 2022). While these instruments take a similar nursing student-

focused approach to understanding the preceptor role during clinical experiences, the underlying constructs of each instrument vary. Using validated existing survey items may be convenient; however, careful attention must be taken to ensure all items within the tool effectively support the underlying research question.

Several steps of DeVellis's survey instrument development guidelines assisted with modifying and adding to a survey exploring students' perceptions of the inviting behaviors of nursing staff during clinical experiences. Clarifying and defining items was essential to understanding the survey's purpose and intent and contributed to item pool development. Collaborative academic-hospital expert panel discussions supported negotiations, modifications, and the creation of a pilot survey.

Russell's (2022) Justification of Continued Use Framework

Survey results from the pilot survey will be used to support validation measures within Russell's (2022) Justification of Continued Use framework. Justification and continued use of a survey instrument begins with identifying the intended purpose, which in turn supports instrument validity (Russell, 2022). Using Kane's (2013) argument-based approach, Messick's (1989) broader scope of sources of evidence for validity and aligning definitions of validity found in the Standard for Educational and Psychological Testing (AERA/APA/NCME, 2014), Russell created a visual guide outlying an instrument's justification of continued use. Within Russell's model, steps involved with instrument validity relate to the purpose while verification of interpretation, decisions, and utility of actions support and instruments use. As supported by Russell, there is "a clear distinction between validity for specified/intended use and actual use" (p. 32). Russell's Justification of Continued Use model in Figure 2.2 outlines an integrated evaluative process, whereas judgment is placed on whether there is enough evidence to warrant

continued use. Within the Justification of Continued Use model, judgment is informed within three areas: Instrument Validity, Verification of Interpretation and Decision, and Utility of Actions. Instrument validity contributes to an instrument's purpose through identified steps where specific constructs are targeted, which in turn causes a score used to support inferences to inform its use. These inferences, which establish an instrument's purpose, inform the Verification of Interpretation and Decision component, where an instrument's results can be interpreted to inform decisions, leading to the final consequential Utility of Action(s) phase.

Figure 2.2.

Russell's Justification of Use Model
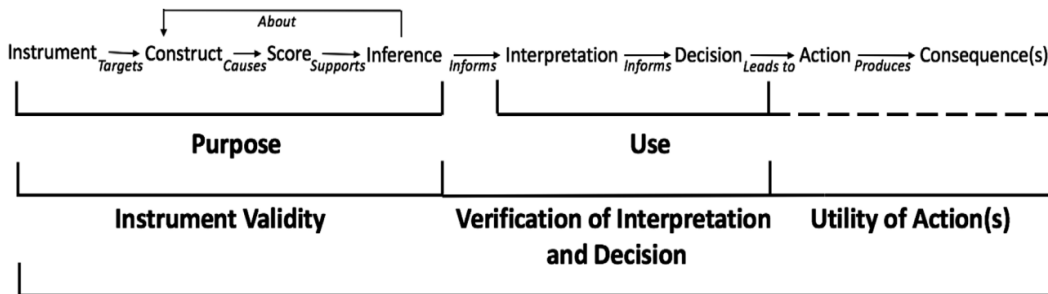
Note: Permission from Dr. Russell to use the model is listed in Appendix B.

By beginning with a clear purpose, researchers can construct an instrument that focuses on a specific population, reviews related causal constructs, and uses scores to support inferences (Russell, 2022). This research project uses the initial Instrument Validity steps found in the Justification of Use model to engage in steps for validating a new instrument targeting nursing student perceptions of staff nurses during their clinical experiences. Exploring the perceptions of different types of nursing students' perceptions of inviting behaviors of nursing staff members through survey methods will produce results that can be psychometrically analyzed through Rasch modeling. Following guiding principles within Russell's Justification of Use model, if an

61

instrument and its underlying constructs are well developed, the resulting scores will provide reliable evidence to support future decisions and actions. Without fully understanding the consequences, inferences cannot be made to inform the use of the instrument. Literature to support the use of Rasch methods will be discussed in Chapter Three.

The clinical environment has many influencing factors; therefore, careful attention must be taken to ensure the tool's intent is clearly defined and best fits the anticipated sample group. Knetka et al. (2019) shared that "even if a survey has a long history of established use, this alone does not provide adequate validity evidence" (p. 3). Students' perceptions can change in response to many factors within the CLE. Some factors contributing to measurement error may include the time the experience took place, who was involved in the experience (i.e., faculty, nurses, or other staff members), or previous learning experiences at the exact location. As a result, reviewing multiple validity measures of one instrument and performing ongoing validity testing is essential if reliability claims are to be made.

Literature Review Summary and Conclusion

A combination of Bronfenbrenner's theoretical framework and research to support effective survey development methods constitutes this study's overarching framework. Nursing programs must explore the students' learning environment and the factors supporting or hindering their experiences. A supportive and caring learning environment can cultivate a sense of belonging to support student learning. Research encourages using models, frameworks, and tools to facilitate student learning in the clinical setting.

Increasingly diverse student populations support the need for providing inclusive learning environments (O'Connor et al., 2019). As supported by Suspitsyna (2011), "the task of creating structures to support inclusive and learning-centered practices is the problem of disrupting

and delegitimizing old meanings, definitions, and practices, and institutionalizing new ones in their place" p. 413. Furthermore, training to support "increasing participants' awareness of the multicultural nature of the university, diverse learning styles, and teaching approaches, discipline-specific content ideas, culturally enriched learning techniques, culturally sensitive assessment strategies, effective intercultural and cross-cultural communication" should be reinforced (O'Connor et al., 2019, p. 634).

Continuous assessments are vital for identifying what works well and what barriers exist within these learning environments. These ongoing assessments will support an institution's mission and a forward-thinking mindset that embraces a vision that promotes diversity and inclusivity practices to support future programs and student success. Examining how nursing students are being prepared for their professional nursing role in this ever-changing healthcare environment becomes vital. With an existing nursing workforce endemic in place, ongoing evaluation of student learning in the clinical setting should be considered a constant and necessary process.

This literature review supports the informed research process by providing a descriptive understanding of key concepts associated with the nursing students' learning environment. Empirical peer-reviewed articles and published books were used to support the review findings. A better understanding of the learning environment assists with identifying the need for ongoing research to support positive student learning environments. Students and their learning environments are ever-changing, facilitating the need to assess critical influencers within these environments continually. The analysis of existing surveys further supports the need to critically examine how instruments are created and validated and their underlying purpose.

A theoretical framework diagram depicting the student CLE with overlapping connections between Bronfenbrenner's Ecological Systems Theory is shown in Figure 2.3.

Figure 2.3.

Nursing Student Clinical Environment Theoretical Framework
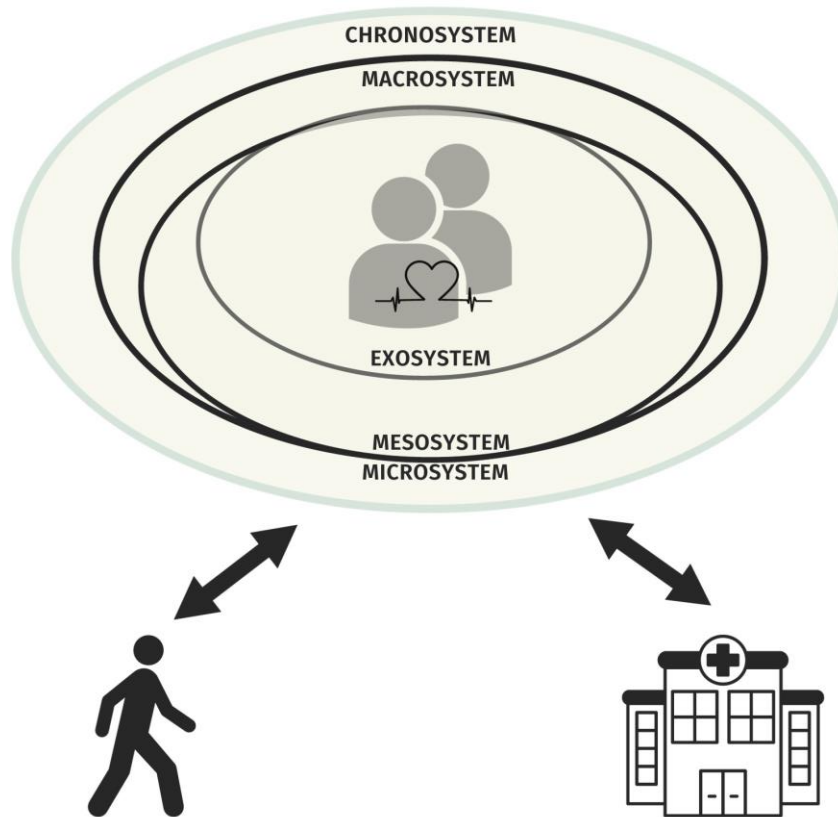
The Nursing Student Clinical Environment Theoretical Framework diagram was created to illustrate how Bronfenbrenner's Ecological Systems Theory's independent yet overlapping, interwoven, and influencing properties are associated with the nursing students' CLE. Within the microsystem, the student has the support of family, friends, and peers as they enter school and begin attending clinical experiences. This most proximal environment serves as a foundation from which students entering the nursing profession continue to grow. Similar to Fish et al.'s (2023) Indigenist Ecological Systems Model, the nursing student theoretical framework

recognizes students' beliefs, norms, and cultural practices are brought forth and become nested within other extending system layers. Using this perspective, individual influencing factors within the students' microsystem are not left behind but instead infused into extending systems through interactions within the mesosystem. As students engage in new practices, their learning continues to be influenced by individuals, policies, and cultural norms. A sense of connectedness and belonging highly depends upon the interactions between students and peers within new or different environments. The student has been placed intentionally in the center of the model as a reminder to remain student focused. Purkey's Invitational Theory is infused within the student to reinforce the importance of examining inclusive and supportive behaviors from a student's perspective. A heart has been placed on top of the student to represent the caring and supportive expectations that are associated with the nursing profession and the expectations of those who support student learning. Moving from the student to the right of the diagram is a building representing the organizations, such as the hospital and nursing programs, that take a vested interest in student learning by providing guidance, support, and an environment to learn. An outline of a person is located on the left side of the diagram and represents the nursing staff and educators who directly impact student learning. The model reinforces the need to closely examine the CLE while taking a student-focused perspective. Demonstrating that many factors affect student learning reinforces the need to constantly explore how students learn and are influenced by others. The model supports my research question by providing a visual guide and reminder that students are at the heart of education. Supporting student learning practices using information gained from credible research methods is necessary for enhancing current and future research efforts.

65

Research has identified that multiple factors within the learning environment impact student learning outcomes (Fraser, 1998; Sand-Jecklin, 2009), and nursing programs with a vested interest in student learning must understand the impact of these influences. Survey methods provide a means to obtain student feedback that can provide evidence to support positive learning experiences in ever-changing healthcare environments. Because the CLE and the practices occurring within it are dynamic, ongoing evaluation becomes necessary and will assist with recognizing trends, barriers, and opportunities. Nursing practice standards ensure that nurses engage in honest and ethical behaviors. As a nurse and a researcher, these standards align with what is expected when conducting research studies.

Understanding the essential components of the CLE is not enough to support student learning, which makes it imperative for educators to ensure that effective feedback methods are in place. Utilizing a credible survey instrument that has demonstrated effectiveness is one way to provide solid evidence to support any change efforts. When using survey methods, researchers must ensure the tool is well constructed and captures what is needed to support accurate research findings. As Knetka et al. (2019) shared, the validity of an instrument is its proposed interpretation rather than a property of its measurement. One cannot assume all populations and purposes are the same, so validity testing should be considered each time the instrument is administered (Kane, 2016). Results can be interpreted and used effectively by taking a critical and methodical approach to designing an effective survey instrument. These essential practices are vital to ensuring the credibility of findings while promoting positive change efforts.

CHAPTER 3: METHODS

This chapter will focus on the survey design and methodology used to perform psychometric testing of an instrument measuring nursing students' perceptions of nursing staff behaviors during clinical experiences. Since the survey used for this project is a modified version of existing survey items created by a team of researchers from one hospital organization, the study begins with a summary of the pilot instrument development process. Collaborative academic-hospital practices are identified in the steps taken for pilot testing 315 nursing students who completed clinical experiences at four locations with one hospital organization in the midwestern part of the US. A description of the methods used to perform psychometric testing of the piloted tool will support construct validity measures within Russel's Justification of Use framework. Information regarding the sample and statistical methods used to perform psychometric testing are included. This section aims to address the underlying research purpose: Investigate the psychometric properties of an instrument designed to explore student perceptions of nursing staff behaviors during clinical experiences.

Research Design and Methodologies

Survey instruments need to be well constructed, and there is varying terminology for describing validity and the process of supporting validity findings (Cizek, 2012, 2016; Messick, 1989; Russell, 2022). While some researchers and theorists claim validity focuses on instrument functioning (Cizek, 2012; Kortetz, 2016), others strongly believe validity should go beyond functioning to include how test scores are used to make decisions along with the purpose or consequences of the results (American Educational Research Association, American Psychological Association, and National Council on Measurement in Education, 2014; Cook & Hatala, 2016; Messick, 1989, 1995; Shepard, 2016). Messick (1989) claims that a comprehensive

validity study should independently focus on a survey instrument's inferences and actions. Similar to Messick's point of view, Kane (2013) believes that "validating an interpretation or use of test scores is to evaluate the plausibility of the claims based on the scores" (p. 1). Within this definition, Kane reinforces an argument-based approach for not examining a score alone.

The primary focus of this dissertation project involves preliminary piloting and psychometric testing of a new survey instrument exploring nursing student perceptions of inviting practices of nursing staff during clinical experiences. Results from the survey development and piloting process provide evidence to support several aspects of validity that will inform future use. Methodological processes for examining the reliability and validity of the pilot survey are guided by DeVellis's (2017) survey development and Russell's (2022) Justification of Use Model. Within Russell's framework, an expert review process and preliminary testing of a pilot survey are the first steps in supporting validity measures before an instrument can be used. Ensuring an instrument is valid and purposeful establishes a foundation for how results can be interpreted and used. The survey development process will be used to understand the psychometric properties of the SCES and use this information to support its effectiveness for measuring nursing students' perceptions of inviting practices of nursing staff within the clinical practice environment.

This section will inform readers of the methods used to perform statistical analysis with Rasch analysis within Russel's Justification of Continued Use model. Conducting a pilot test and examining the results through psychometric testing with Rasch methods will provide evidence to support validity measures. Engaging in research practices with a student-focused perspective will produce evidence to support best practices between nursing staff and students within the clinical learning environment.

Phenomenon for Measurement: Student Perceptions of Nursing Staff Inviting Behaviors

The instrument used in this research project is designed to explore how nursing students perceive the inviting practices of staff nurses during their clinical learning experiences. Research has identified the positive and negative impacts of the student-nurse relationship on student learning and emotional well-being (Amimaruddin & Ruditaldris, 2022); therefore, I chose to focus on student perceptions of inviting behaviors of nursing staff. Student perceptions, which reflect thoughts, feelings, opinions, and beliefs, are a latent variable that may inform educational practices. Perceptions involve taking a sense-making approach to understanding or interpreting situations through self-awareness practices. Perceptions can be further identified as attitudes, which are feelings or opinions about something or someone (Cambridge Dictionary, 2023). While presenting the argument that attitudes can be measured, Thurstone (1928) identified:

> The true allocation of an individual to a position on an attitude scale is an abstraction, just as the true length of a chalk line, or the true temperature of a room, or the true spelling ability of a child, is an abstraction. We estimate the true length of a line, the true temperature of a room, or the true spelling ability of a child, by means of various indices, and it is a commonplace in measurement that all indices do not agree exactly (p. 529).

The construct is context-dependent in that the inviting practices of nursing staff within the clinical environment influence student learning and advancement into a professional nursing role. With this in mind, I plan to use Bronfenbrenner's Social Ecological Systems Theory and the supporting literature described in Chapter Two to inform my thinking about the influence of inviting or uninviting behaviors on student learning. Before providing a complete description of the methods used in this study, I am including my positionality as a nurse educator and researcher to discern my research approach.

Positionality

       I am someone who seeks to understand how the survey design process and results obtained from a valid tool can assist with moving thoughts and ideas forward. As a nurse and educator, I am a naturally curious person who enjoys listening and helping others. Within this role, I have learned to value the communication process by listening first before reacting or enacting any type of change. Collecting good feedback from others can also assist with helping others understand the importance of why change occurs. By listening, observing, and asking the right questions, positive improvements can be made to support what students want and need to be successful.

       Throughout my nursing career, I have engaged in many types of student precepting and mentoring practices. My interactions with students during these experiences have greatly influenced why I have chosen to advance my professional career in education. As a nurse and educator, I have witnessed the effects of a positive learning environment on student learning and have enjoyed being a part of the process. Taking an active role to understand student perceptions better is one way to ensure that learning needs are addressed. As a faculty member who actively evaluates student learning in a precepted clinical setting, I am curious as to how the role of a preceptor affects student learning. Hearing feedback from students regarding how nurses act as role models while assisting with their learning provides opportunities for exploring other factors within the clinical learning environment.

       The idea for this project is a culmination of several events that began several years ago after having private conversations with, reading journals, and listening to recorded reflections from nursing students during their capstone clinical experiences. Although not directly prompted, on several accounts, students shared through reflective journaling how their assigned

70

preceptor(s) either positively or negatively influenced their sense of belonging and overall learning in the clinical environment. Roberts and Biddix (2021) shared that student learning "is a product of structures influenced by the environment, time, location, circumstance and many other contextual and individual factors that need to be considered when designing and conducting assessment" (p. 54). While listening to students share their experiences, I was also reminded that planning clinical placement opportunities considers the physical location of learning experiences but also needs to consider other contextual factors such as the climate and culture. Understanding that multiple factors influence student learning supports my desire to understand how these factors impact student learning. To better understand systems-based processes, one must question why certain practices are happening and never accept a "this is how we have always done it" philosophy. Being a part of many types of influencing systems provides opportunities to take a broader approach to understand better why things are happening and remain curious in the process. Being open-minded to the many types of factors that can influence one's environment will assist me with challenging assumptions while creating a pathway to support inclusive practices.

Through this dissertation project and the actions to support the process of creating effective survey methods, I hope to provide evidence to support existing and future research practices that focus on the clinical learning environment. By applying the knowledge gained from engaging in effective research practices, I can better assist students in their learning as they advance into their professional roles. Identifying the strengths and barriers affecting student learning will assist with continuous improvement efforts in ever-changing healthcare environments. Overall, methods for evaluating student performance and the influencing factors behind them should be an ongoing process, and change should be an expectation. As an educator,

71

I always wonder whether what is in place is good enough. I want to continually ask what can be done to assist those who are learning (students) and those who provide guidance or collaborate with our students.

Instrument Development

Using DeVellis's (2017) guidelines for scale development, this survey project engaged in collaborative academic-hospital practices to better understand the functioning of an instrument intended to measure student perceptions of their clinical learning experiences with staff nurses. Researchers have identified the importance of academic-clinical partnerships with good collaborative practices that promote excellence in teaching, learning, and patient care (Letcher & Nelson, 2014). These expert panel discussions were essential for clarifying the survey's intent, leading to the review of existing surveys and developing an item pool for expert review.

History of Survey

The pilot survey for this research project evolved from enhancements to an existing non-validated instrument, the Student Course Experience Survey (SCES). Research members from one hospital organization created the SCES to explore nursing students' perceptions of nursing staff behaviors during CLEs at their facility. The hospital organization recognized student experiences with nursing staff could positively or negatively impact their future goals of becoming a nurse.

Hospital research team members administered the SCES to nursing students attending clinical experiences at various organizational sites and who were enrolled in BSN, ADN, and LPN programs. Survey results were collected over three academic semesters, and responses were reported using descriptive data reporting measures. Since the SCES was a new instrument, team

members expressed interest in using survey responses for psychometric validity testing of the scale.

The original SCES was administered in an online format and consisted of an introduction section with questions related to the type of nursing program enrolled in, the geographical clinical site location, and the area or department where most experiences occurred. The next section of the survey contained six statements pertaining to student interactions with nursing staff during clinical experiences and one statement regarding overall satisfaction with their clinical experience. One open-ended item allowed students to share any comments related to their experiences. The survey concluded with general questions regarding future employment choices.

Responses to the six survey items relating to students' perceptions of nursing staff behaviors were recorded on a five-point Likert satisfaction rating scale from one to five. The layout of responses within the online platform displayed three visible options: (1) *Not satisfied*, (3) *Somewhat satisfied*, and (5) *Extremely satisfied* without a neutral midpoint. A drop and drag bar was located under the scale, allowing students to indicate their level of satisfaction on or between the three listed visible response options. An outline of the original instructions and survey items is listed below:

Please report the following items based on interactions with nursing staff from the department where you completed your clinical experiences.

1. Welcomed you to your clinical experiences:

2. Supported you in a professional manner:

3. Interacted with you respectfully:

4. Served as a valuable resource when sharing information regarding patient care:

5. Answered your concerns/questions:

6. Inspired you to become a (named Hospital Organization) Nurse:

7. Rate your overall satisfaction with your clinical experience:

8. Please share any feedback you have regarding your clinical experience at_____ (Hospital Organization):

Variables that are not directly observable should use more than one observable variable, such as responses to survey questions, to represent the construct (Knetka et al., 2019). After reviewing the SCES and meeting with the hospital research team members to discuss psychometric validity testing, items relating to student satisfaction with the CLE became the primary focus of the ongoing survey development processes. After identifying the number of survey statement items as a limiting factor for validity testing measures, negotiations between research members and me for adding survey items ensued. Before new items could be explored or added, it was essential to clarify the purpose of the survey. Collaborative discussions identified four underlying themes to define inviting behaviors and support further construct development. The resulting defined themes include:

Welcoming: A sense of belonging, feeling respected, and a sense of inclusion. Do nursing students feel that nursing staff acknowledge their presence, and do they feel included and respected?

Supportive: Receiving encouragement and displaying interest in assisting with learning. Do nursing students feel that nursing staff offer guidance and constructive feedback to support their learning? Do nursing staff ask questions to support achieving learning goals?

Valuable Resource: Useful, knowledgeable, guiding, and helpful. Do nursing students perceive the nursing staff as being knowledgeable and dependable resources to support their learning?

Inspiring: Being moved to action and promoting a sense of success. Do the actions of nursing staff support being successful, and are they positive role models for the nursing profession? Did the actions of staff nurses assist them with feeling better prepared to become professional nurses?

After defining terminology related to the unobserved variables, collaborative discussions resulted in an agreement for me to explore additional survey items that could be reviewed through an expert review process. The hospital organization research team was open to adding survey items; however, they wanted to keep the original statements for future comparative analysis. Furthermore, hospital team members voiced concern that adding too many items might adversely affect response rates. While it has been suggested that low response rates may not produce powerful results (Cone et al., 2018), an instrument that has been reduced in length may fail to meet its overall purpose and analysis objectives (Peytchev & Peytcheve, 2017). Thus, negotiation of the number and types of allotted items was inherent to support best practices for strengthening the overall survey design and producing a valid and reliable instrument.

Exploration of Other Surveys

A thorough review of the literature focused on research-based and validated survey instruments used in nursing or related fields to gather student perceptions of their CLE was conducted to prepare for the next steps in the instrument revision process. Previously validated survey items were considered based on the instrument's student-focused perspectives of nursing preceptor or instructor behaviors. Initial steps for exploring previously validated surveys began

with a database search of qualitative and quantitative research findings to ensure the construct aligned with relevant prior research and theory (Artino et al., 2014). EBSCOhost Academic Search Premier and CINAHL were the primary search engines used to identify articles relating to nursing student perceptions of the CLE. Search engine words included clinical learning, clinical learning environments, student nurse, nursing, survey, questionnaire, and psychometrics. Additional literature searches explored terminology related to inviting behaviors, including the associated terms of welcoming, supported valuable resource, and nursing role model. During the literature review search process, common themes evolved relating to the role of a nurse mentor who serves as a role model. These common themes included being approachable, trusting, encouraging, respectful, helpful, providing helpful feedback, and actively involving them in learning activities.

Several survey instruments were reviewed before being considered for the pilot survey item pool. The SECEE and PET survey instruments were considered for use in lieu of creating a new survey since their underlying purpose aligned well with the pilot survey's intent to explore the inviting behaviors construct. The SECEE instrument consists of 35 items aimed to assist clinical agencies and nursing program administrators with a better understanding of student perspectives of their clinical learning environment (Sand-Jecklin, 2021). While most statements within the SECEE related to student perceptions of their nursing preceptor and or instructor, several items focused on other environmental aspects, such as the clinical setting and academic expectations. The PET consisted of 23 items focusing on preceptor behaviors and was intended to be used by new practicing nurses and their preceptors (Spector et al., 2015). While several items within the PET aligned with inviting practices, others relating to workload adjustment and ethical concerns did not. A limiting factor of these two instruments was that they had been

76

created from a broader academic rather than hospital-focused perspective, and several survey items did not support the inviting behaviors of nursing staff construct. The construct misalignment of these instruments did not hinder their consideration for the item pool review process. Although the surveys in their entirety were not used, several items from each were included in the initial item pool.

Overall, a thorough review of the literature and exploration of previously validated survey instruments did not support using an existing instrument, confirming the need to proceed with the next steps of survey pool item development. While several survey instruments exist to measure nursing student perceptions of the CLE, each differed in the number of constructs measured and underlying research questions. Furthermore, the length of all surveys meeting inclusion criteria for supporting student perspectives of mentoring inviting behaviors exceeded the hospital organization's item limit parameters. This lack of uniformity is partly due to the uniqueness of the CLE, the types of supervision provided, preceptor training, and ever-changing healthcare practice systems. While reviewing several survey instruments primarily focusing on nursing students' perceptions of their clinical environment, it became clear that the CLE is multifaceted, and every instrument contains unique constructs. From a system-based perspective, many factors contribute to the learning environment, making evaluating the environment complex and unrealistic. The examination of the unique qualities within each instrument supports the importance of choosing or creating an appropriate survey tool. Results from the exploration of potential survey instruments support the next steps with the final item pool review by experts process.

Expert Review and Elimination of Items

The exploration of research findings and review of previously validated survey instruments clarified this study's intent, informed inclusion criteria, and supported the development of an item pool for expert review. A six-member expert panel composed of five hospital research experts and I met virtually on February 24, 2023, to review the initial pilot survey item pool. All expert panel members were licensed and practicing Registered Nurses. Two members held a Bachelor of Science degree, three members held a Master's degree, and one member held a Doctor of Nursing Practice (DNP) degree. The expert panel was tasked with reviewing all proposed items for clarity, conciseness, relevance, ambiguity, and unnecessary repetition.

The initial pilot survey item pool consisted of 46 items aligned with the defined inviting behaviors themes. The item pool consisted of 12 items from the Preceptor Evaluation Tool (PET) and four from the Student Evaluation of Clinical Education Environment (SECEE). The remaining 20 items were created with guidance from supporting research identified in the literature review process (Appendix C). Within the 46-item pool, 10 aligned with the definition of being welcomed, 13 aligned with being supported, 13 aligned with staff nurses as a valuable resource, and five related to being inspired to be a nurse.

The initial 46-item pool count brought forth concerns from hospital team members. Since adding new items to the survey would increase its overall length, there was a perceived risk that overall response rates would decrease. Through collaborative discussions, a compromise was reached to retain five items for each of the four defined inviting behavior themes, which resulted in 20 items for consideration. The final 20 items consisted of five previously validated items (three original items from the PET, two from the SECEE) and 15 new items. (Appendix D).

The expert review panel met virtually for a second time on March 10, 2023, to review the agreed upon 20-item pool and overall survey format. In addition to the 20 items, I proposed four new items relating to the survey's "overall satisfaction" statement. The expert research panel reviewed all 24 items. At the conclusion of the meeting, the four suggested items relating to the survey's "overall satisfaction" statement were rejected, and the 20-item pool was reduced to 10 items.

Final Items on the Survey

After engaging in survey modification steps, several changes to the existing survey occurred. The expert panel review process resulted in 10 additional survey items to support the underlying construct. Two items, "Provided me with useful feedback regarding my performance" and "Instructor served as a positive role model for nursing," were adopted from the SECEE. One item from the PET, "Helped me to determine appropriate patient priorities," was adopted, and a second, "taught me to ask questions (such as "What if…? or What could these symptoms mean?") was modified before being added to the final item pool. Since these survey items were obtained from existing instruments, permission for item use was obtained from Dr. Spector (Appendix G) and Dr. Sand-Jecklin (Appendix H). Overall, the final items from the SECEE and PET were congruent with the underlying CLES survey development inviting behaviors construct and themes.

In addition to adding survey items, Likert scale survey response options were changed from satisfaction to an agreement response with a neutral option. The original CLES survey used a sliding five-point Likert satisfaction rating scale without a neutral point. The layout of responses within the online platform displayed three options: (1) *Not satisfied*, (3) *Somewhat satisfied*, and (5) *Extremely satisfied*. A drop and drag bar located under each scale item allowed

students to indicate their level of satisfaction at the three listed points or between each of the three response items. The change from satisfaction to agreement occurred to better align with survey statements and provide response clarity. For example, statement items, including "Welcomed to your clinical experience," Interacted with you respectfully," and "Supported you in a professional manner," were intended to provide response options comprehension. Rather than being satisfied with being supported or welcomed, which is often difficult to define, students could choose to agree or disagree with these and other items. Moving beyond knowing if students are satisfied provides opportunities to understand better to what degree students recognize inviting behaviors. Changes to the final pilot survey responses were displayed on a slider scale as (1) *Strongly disagree*, (2) *Disagree*, (3) *Neither agree nor disagree*, (4) *Agree*, and (5) *Strongly agree*. When students moved the slider scale, additional response options, including "Agree" and "Disagree," became visible for selection. In addition to the Likert response option statements, any open-ended statement remained for students to share clinical experience feedback.

The expert panel reviewed demographic items after finalizing the survey items and response option format. The original survey demographic information remained in the pilot survey and included the region, facility, and unit where clinical experiences took place, the name of the nursing program the student was enrolled in, the semester of study, and the type of clinical experience (group or practicum/preceptorship). Additional demographic information was suggested to the expert review panel to support research findings for making generalizability claims. Items accepted by the hospital team members included participant age, number of clinical experiences in hours, and type of nursing program enrolled in. Demographic suggestions rejected by the committee included gender identity, age, race, and ethnicity. The initial pilot

survey item pool introduced for expert panel review and the resulting final item pool are listed in

Table 3.1. A copy of the final survey pilot items is listed in Appendix E.

Table 3.1.

Pilot Survey Item Pool from Expert Panel Review

Initial Items	Final Items
Five point Satisfaction Likert scale	Five point Agreement Likert scale
	From item pool:
Welcoming: Sense of Belonging, Respect, Communication, Inclusion.	
The continuity of my learning experiences was ensured even when I did not work with my primary nurse.*	Acknowledged my presence.
The nursing staff greeted me at the start of the clinical shift.	
The nursing staff on this unit acknowledged my presence.	
The staff was approachable.	
I felt supported if I did not know how to do something.**	
I felt comfortable asking questions.	
I felt included by my nurse when prioritizing patient cares.	
I felt ignored during my clinical experiences.	
If my assigned nurse was busy, other nurses assisted me with providing patient cares.	
My assigned nurse kept other staff aware of what I could do.*	

Table 3.1.

Pilot Survey Item Pool from Expert Panel Review (Continued)

Initial Items	Final Items
Five point Satisfaction Likert scale	Five point Agreement Likert scale

Supported: Provided encouragement, displayed interest in assisting with learning.

My nurse (or the nursing staff) encouraged me to ask questions.	My nurse included me in the planning of patient care.
My nurse was interested in hearing my thoughts or ideas.	Encouraged me to ask questions.
My nurse took the time to answer my questions.	
My nurse was available to me during the clinical experience.**	
My nurse demonstrated a willingness to help me achieve my learning goals.	
I was provided with useful feedback regarding my performance.**	
My nurse included me in the planning of patient care.	
I sometimes felt that I was bothering the nursing staff.	
I felt that my nurse did not want me around.	
I felt supported in developing my delegation skills.	
Nursing staff provided opportunities for me to enhance my communication skills with patients.	

Table 3.1.

Pilot Survey Item Pool from Expert Panel Review (Continued)

Initial Items	Final Items
Five point Satisfaction Likert scale	Five point Agreement Likert scale

Initial Items	Final Items
Nursing staff provided opportunities for me to practice skills (i.e., starting IV's, foley catheters, etc.).	Provided opportunities for me to practice skills (i.e., starting IV's, foley catheters, etc.).
Valuable Resource: The useful /helpful qualities and attributes of a person.	
I can see myself reaching out to my nurse preceptor for guidance in the future.	
My nurse was knowledgeable of hospital policies and procedures.	
My nurse encouraged me to use evidence-based practice *to make clinical decisions.**	
My nurse preceptor encouraged me to integrate evidence-based practice *into patient care*.*	
*My nurse helped me to determine appropriate patient priorities.**	
My nurse provided me with the information I needed to care for my patients.*	
My nurse guided me through situations that I was unfamiliar with.	
My nurse taught me to ask questions (such as "what if…? Or "What could these symptoms mean?") as a way to develop my clinical reasoning skills.*	
My nurse taught me how to use information technology for patient care.*	

Table 3.1.

Pilot Survey Item Pool from Expert Panel Review (Continued)

Initial Items	Final Items
Five point Satisfaction Likert scale	Five point Agreement Likert scale
My nurse helped me to interpret clinical situations.*	Helped me determine appropriate patient priorities
My nurse provided me with feedback about my strengths.*	Guided me through situations that I was unfamiliar with.
My nurse provided me with feedback about what I needed to improve.*	Helped me feel better prepared to become a professional nurse.
My nurse provided constructive feedback regarding my performance.**	
Inspired: (inspiration: a feeling, moved to action; promotes a sense of success)	
The nursing staff helped me feel better prepared to become a professional nurse.	
The nursing staff helped me understand what it means to be a nurse in this organization.	Demonstrated ways I could succeed
I can see myself working as a nurse within this organization.	Developed from expert panel review:
	Assisted me in achieving my learning goals.
Nursing staff shared ways I could succeed in this organization.	Served as positive nursing role models.
My nurse had a positive attitude toward working at (this organization).	Included me in the plan of care.
Overall Satisfaction:	
This clinical site provided many opportunities to enhance my learning.	
I would recommend this clinical site to other nursing students.	

Table 3.1.

Pilot Survey Item Pool from Expert Panel Review (Continued)

Initial Items	Final Items
Five point Satisfaction Likert scale	Five point Agreement Likert scale

My clinical experiences are preparing me to succeed in nursing.	
There was a supportive environment for this clinical experience.*	
The clinical environment provided ways for me to learn from experienced nurses while improving my nursing skills.	

Original survey items:

Welcomed me to my clinical experience.	Welcomed you to your clinical experience.
Interacted with you respectfully.	Interacted with me respectfully.
Supported you in a professional manner.	Supported me in a professional manner.
Answered your questions and concerns.	Answered my questions and concerns.
Inspired you to become a (hospital organization) nurse.	Inspired me to become a (hospital organization) nurse.

Data Collection

Survey Distribution

This project's partnering hospital organization informed and distributed the pilot survey to all nursing students enrolled in the organization's clinical registration platform. The hospital organization sent an email invitation containing a SurveyMonkey® platform link to complete the pilot survey, which was delivered to a sample of 1,659 nursing students at the end of the spring 2023 academic semester. The email invitation provided students with a brief description of how survey items focused on their experiences with the organization's nursing staff and that responses would provide information to identify strengths and opportunities for best future clinical experiences. Since the survey was sent directly to students from the hospital organization, they knew the hospital would use their results for assessment purposes. Additional information within the survey platform provided to students included a description of why they had been chosen to participate, how de-identified data might be used for research, and that their participation was voluntary. Once students accessed the online survey, and before survey items were displayed, they were asked to provide demographic data related to the term and type of nursing program enrolled in, the name of the nursing program, the region where experiences occurred, the amount of attended clinical hours at this organization, age, and whether they attended clinical with a group of students or were by themselves in a practicum or preceptorship experience. Survey instructions prompted students to evaluate one clinical area if they had attended clinical experiences at more than one site. Consent was considered to be assumed when students took the survey, and no incentives were offered for completing it. The organization sent a participation reminder to students one week after the initial invitation, and the survey remained open for 23

consecutive days. The partnering hospital organization collected all survey results, and I had no

contact with the invited student participants during the survey distribution process.

Context of Data Collection Site

The sample frame for this study was from a population of nursing students who had

attended inpatient hospital and clinic-based experiences at one hospital organization's urban

hospital-based locations across three states in the Midwestern part of the US.[8] Student clinical

experiences occurred in at least one hospital or ambulatory clinic-based location, including

Obstetrics, Pediatrics, Intensive Care, Emergency Department, Neurology, Operating Room,

Orthopedics, and Medical-Surgical. All invited students were enrolled in a Bachelor of Science

in Nursing (BSN), Associate Degree in Nursing (ADN), or Licensed Practical Nursing (LPN)

program from across the Midwest region of the US. [1]

Access to Raw Data

Access to identity-protected secondary raw data student survey responses was obtained

after applying for Institutional Review Board (IRB) approval and receiving a non-human subject

exemption from the partnering hospital organization. Since the hospital organization provided

non-exemption status and raw data survey results were provided by them, North Dakota State

University (NDSU) did not require submission of an IRB application. The partnering hospital

institution required the use of a non-study honest broker as an impartial mediator when raw data

results are shared outside of the organization. An honest broker shared de-identified results with

me as the primary investigator. The honest broker is described as a non-study team member, a

neutral intermediary (person or system) between the individual whose data are being studied and

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[1] Using the US Census definition as a guide, urban is described as pertaining to an area that
contains at least 2,000 housing units or with a population of at least 5,000 individuals

the investigator. There were no limitations for who I could choose, and the study's partnering

hospital organization's honest broker was used based on their familiarity with hospital

institutional review board requirements and data retrieval methods. The honest broker collected

and collated identifiable pertinent information regarding the data and then generated a limited,

completely de-identified data set. The honest broker could only release de-identified or coded

data and was prohibited from releasing the re-identification key to the investigator under any

circumstances, per institutional requirements.

Sample Characteristics

The response rate for this study was 18.8% (*n=348*). Data cleaning removed 36

participants (10%) who responded to the demographic section and did not respond to any (0%)

clinical experiences survey items. There were no recorded partial survey item responses, which

yielded a total sample of 312 participants. Of the sample 312 participants, 291 (93%) reported

their exact age, which ranged from 19 to 52 years old. The majority of students, 197 (67.6%),

reported their age between 19 and 23, with a mean of 22. All of the 312 respondents indicated

the type of nursing program they were enrolled in, with a notable majority of 244 (78%) in a

BSN program, 39 (13 %) in an ADN program, and 29 (9%) in a LPN program. All respondents

selected a range of total completed clinical hours at the hospital, with the least amount, 35 (11%)

indicating 0-10 hours, 91 (29%) in 11-40 hours, 112 (36%) in 41-120 hours, and 74 (24%), in

120 or more hours. All but two respondents (*n=310*) indicated whether they were in a group

clinical experience, defined as eight or fewer students from one nursing program at one clinical

site, or practicum/preceptorship experience where the student was at the clinical site alone and

not part of a group. Of the 311 responses, the majority of students, 237 (76 %), were part of a

group clinical, and 74 (26%) were in a practicum or preceptorship clinical. See Table 3.2 for student demographic information.

The demographic information was considered in this study as it captures information related to students enrolled in three types of nursing programs. Students enrolled in BSN, ADN, and LPN programs are prepared for practice with different curriculum requirements that vary in completion length and clinical hour requirements. Depending on the type of program, students enrolled in LPN and ADN programs typically complete their degree in less than two years, compared to four years with a BSN degree. Additionally, state and national nursing program accrediting agency standards require BSN-prepared nursing students to engage in more directly supervised hands-on clinical experiences than ADN and LPN students. Students enrolled in BSN programs who have engaged in more clinical practice hours have more opportunities to interact with nursing staff. Lastly, the types of activities students can perform during clinical experiences are guided by the type of degree and preparation within the program. Differing scope and practice guidelines dictate what students of each kind of program can and cannot do in the clinical environment. All of these factors must be considered as they may affect how students perceive the meaning of items and their response choices. Reviewing survey responses from all student respondents supports using this tool for multiple types of nursing education programs.

Table 3.2.

Sample Characteristics

Variable	Percent	N
Type of Nursing Program (N=312)		
BSN	78.0%	244
ADN	13.0%	39
LPN	9.0%	29
Age (N=291)		
19-23	67.6%	197
24-28	12.3%	36
29-33	21.3%	62
34-38	5.8%	17
39-43	3.4%	10
44-52	1.8%	4
Number of Clinical Hours Completed (N=312)		
0-10	11.0%	35
11-40	29.0%	91
41-120	36.0%	112
120 or more	24.0%	74
Type of Clinical Experience (N=310)		
Group Clinical	76.1%	236
Practicum/Preceptorship	23.9%	74

Data Analysis

Introduction to Russell's Framework and Rasch Analysis

Russell's (2021) Justification of Use model was used as a guide to examine the

psychometric function of the SCES pilot survey. According to Russell, before an instrument can

be used for interpretation, decision-making, and to inform future actions, careful attention must

be taken to ensure instrument validity. Within Russell's model, assessment measures are outlined

in two phases that contain distinct processes for justifying an instrument or assessment's ongoing

use. The first "Purpose" phase focuses on instrument validity, whereas an instrument's identified

construct results in a score to support inferences. The second "Use" phase focuses on the verification of interpretation and decisions, and the utility of actions once validity measures have been established. In this second phase, a valid and purposeful instrument informs interpretations and conclusions that lead to continued actions and consequences.

This research project used Rasch analysis methods to support construct validity aspects, which align with the purpose phase of Russell's Justification of Use model. Within the purpose phase of the model, "key validity issues focus on the influence of construct representation and influences on instrument scores, the psychometric properties of the scores, and evidence regarding the strength of the inference from the score to the instrument-takers representing the construct" (Russell, 2021, p. 32). Messick's aspects of construct validity were chosen to outline and describe Rasch analysis methods. Construct validity is defined by Messick (1994) as an "overall evaluative judgment to which evidence and theoretical rationales support adequacy, appropriateness of interpretations and actions" (p. 6). When using Rasch analysis to evaluate survey items, the assumptions of construct unidimensionality, latent construct continuity, and item fit must be assumed (Boone et al., 2014). These assumptions for using Rasch methods align with Messick's (1989, 1994) aspects of construct validity by providing a multifaceted approach to supporting and justifying the instrument for continued use.

The Rasch model uses specific psychometric methods for analyzing categorical data (survey responses) and differs from item response theory in that it adheres to the ideals of objective measurement (Boon et al., 2014). Rasch analysis corrects the non-linear scale where raw responses are transformed from an ordinal to an interval-level scale and then into a matrix of item responses (Boone et al., 2014; Linacre, 2002; Wright & Linacre, 1989). Unlike ordinal data, which is best used for rank order levels such as performance ratings, interval data presumes

distance between consecutive points (Young et al., 2017). The measures of the scale are computed and then used for statistical analysis. Analysis results are helpful for making inferences regarding the performance and reliability of survey instrument items and for locating any measurement gaps.

Rasch modeling is appropriate for evaluating survey functioning and has been used in nursing education for psychometric testing of latent variables, including nursing-self-efficacy (Hagquist et al., 2009), professional identity (Li & Lou, 2022), job satisfaction (Ahmad et al., 2017), and perceptions of abilities (Kostovich et al., 2016; Stolt et al., 2019). While exploring the fit of survey items, Hagquist et al. found Rasch analysis techniques helpful for analyzing a new survey instrument and effective for examining and developing measurement instruments to support nursing research. Recognizing a lack of national examination to assess nursing students' critical thinking skills, Jacob et al. (2019) used Rasch analysis to match test questions to cognitive skill levels. These findings reinforced using Rasch analysis techniques as a highly effective method for examining scores while considering student abilities. As an outcome measure, results can help support if responses mean the same for all types of nursing students regardless of the program they are enrolled in or how much training they have received.

Since Rasch analysis methods are being used to evaluate survey items with a single underlying latent construct, parallel analysis (PA) and polychoric exploratory factor analysis (EFA) were performed with StataCorp STATA® statistical software to support alignment of the instrument's items to support dimensionality claims (Boone et al., 2014). All remaining analysis methods were conducted using the Andrich-Wright Rating Scale Model (RSM) in Winsteps ® (Version 3.92.1) software. The RSM analyzes ordinal data on rating scales by estimating personal ability and item location of difficulty levels on a single scale (Chong et al., 2022).

Following recommendations from Linacre (2000a), the RSM was used since all items used the same Likert agreement response format.

Rasch analysis provides item and person location as the variable to support construct theory. An instrument's validity is not a property of measurement but rather how the results are interpreted and used (Knetka et al., 2019). Probability rating estimates were obtained by exploring the item responses and respondent abilities. To avoid misrepresenting analysis findings, all response scores recorded at the highest or lowest points on the Likert scale, defined as extreme responses, were excluded (Boone et al., 2014).

Aligning Rasch analysis methods with Messick's (1994) unified concept of construct validity was used to support the initial purpose phase of Russel's (2021) Justification of Continued Use framework. Psychometric analysis with Rasch methods produced evidence to define several aspects of construct validity, which was necessary to inform inferences for future instrument use. A description of how Rasch methods aligned with Messick's structural, content, substantive, generalizability, and interpretability aspects of validity are described within this chapter.

Step 1: Parallel Analysis and Exploratory Factor (Structural Aspect)

Understanding the relationships or consistency of an instrument's internal scoring to the construct domain supports the structural aspect of construct validity (Brown, 2010; Messick, 1995). When applied to survey responses, a survey answer is "valuable to the extent that it can be shown to have a predictable relationship to facts or objective states that are of interest" (Fowler, 2014, p. 75). Performing EFA is valuable for assessing the dimensionality or confirming the number of latent variables of scales (Baglin, 2014; Cho et al., 2009). The Rasch model assumes respondents should answer items similarly when the latent construct is

unidimensional and continuous. A violation of this assumption may indicate an item or items need to be added, revised, or removed.

Parallel analysis (PA) was used initially to determine the number of factors to extract, followed by polychoric EFA to identify the closeness of items to the underlying variable. Since the pilot survey was designed to measure inviting behaviors as one unidimensional construct, Polychoric EFA was used to identify if other underlying factors were present and explain relationships between observed variables. The use of EFA is preferred when new survey scales are developed and pilot-tested, as this type of statistical analysis relies on the sample to estimate variable relationships (Baglin, 2014). Polychoric correlation provides an unbiased estimation of relationships between two bivariate normally distributed continuous variables using an ordinal scale (Baglin, 2014; Olsson, 1979). "Ordinal reliability coefficients may differ from their non-ordinal counterparts because of their scaling assumption, and if one assumes that the observed item responses are manifestations of a continuous underlying item response variable, particular care should be taken in the interpretation of Cronbach's alpha, especially when one has very few item response options and or highly skewed observed item responses" (Gadermann et al., 2012, p.3). Polychoric correlation assumes that the underlying continuum is normally distributed and correct for attenuation caused by the scaling of items (Carroll, 1961; Panter et al., 1997), which results in a more accurate estimate of the reliability of underlying item response variables.

Similar to Pearson correlation methods, polychoric correlation measures the strength and direction of the relationship between two variables. Various researchers have indicated Pearson correlation with ordinal data underestimates the strength of the relationships among variables (Bollen & Barb, 1981; Holgado-Tello et al., 2010; Olsson, 1979). In a study comparing Pearson versus polychoric correlation methods, Gadermann et al. (2012) suggested that a polychoric

correlation matrix produces more accurate estimates of alpha for measurements involving correlation-based ordinal data. The study also recommended using polychoric correlation-based versions of reliability coefficients when data is from non-continuous Liker-type scales with two to seven options. "In so doing, one invokes an underlying continuous variable for each item, and the covariation among these underlying variables then defines the reliability coefficient. In this light, it is useful to think of the tetrachoric and polychoric strategy as akin to a data transformation, so that one is quantifying the reliability of the item response data in this transformed metric" (Gadermann et al., 2012, p.7).

Since variances produce results that may influence decisions for including or removing factors, choosing the most reliable method is imperative for accurate results. Research supports using polychoric correlations to produce accurate estimations when using ordinal Likert scale data (Finney & DiStefano, 2016; Kiwanuka et al., 2022). Polychoric factor analysis can be used to analyze ordinal variables in Likert scales. Both EFA and polychoric parallel analysis were utilized since the survey instrument was designed to measure the inviting behaviors of nursing staff as a single unidimensional construct. Furthermore, the polychoric correlation coefficient has also been shown to create unbiased parameter estimates for both exploratory and confirmatory factor analysis (Holgado-Tello, 2010). Before applying Rasch techniques, performing EFA and polychoric parallel analysis is necessary because the Rasch model "constructs a one-dimensional measurement system from ordinal data, regardless of the dimensionality of those data" (Linacre, 1998, p. 266).

Step 2: Item fit (Content Aspect)

Content validity refers to item sampling adequacy, meaning the scale's content should align with the theoretical and conceptual definitions (DeVellis & Thorpe, 2021). The content

aspect of construct validity is defined by Messick (1995) as evidence of content relevance or how well instrument items represent the intended construct. People and items fit the Rasch model, not the other way around. In essence, Rash provides a way to describe answers better while recognizing that individual responses differ. Rasch analysis can also be used to identify if item responses match what was initially intended. Using Rasch analysis methods, the content aspect of construct validity is supported by reviewing how well items "fit or "misfit" to the model expectations (Boone et al., 2014). If an item is considered not to fit, it is not performing within the Rasch model as predicted (Boone & Noltmiller, 2017).

Winsteps® statistical software was used to explore item response patterns (fit statistics) within the Rasch model. Derived from chi-square statistics divided by their degrees of freedom, item response patterns and how they fit the model's expectations are reported as mean square values (MNSQ) (Caronni et al., 2023; Linacre, 2002). Fit to the Rasch model is represented by Mean Square (MNSQ). The Rasch model identifies an infit and outfit MNSQ, which Linacre describes as being sensitive to unexpected patterns of observations by persons on items. The output MNSQ was used for analysis because these results are easier to diagnose and remedy, producing less threat to the overall measurement (Linacre, 1994). Linacre describes expected MNSQ scores for survey items to have a value of 1.0. Suggested scores between 0.05 and 1.5 logits are considered to be ideal for productive measurement. A MNSQ of less than 0.5 indicates items that are overfitting, predictable, possibly misleading, and less useful for measurement, whereas results greater than 1.5 suggest unproductive responses associated with guessing (Linacre, 1999). When considering item fit, a value of 2.0 or greater is recommended to be removed, as this value represents a distortion or degradement of the measurement system. Furthermore, high outfit scores are more sensitive to responses that may have been obtained by

being careless or merely guessing correctly. Furthermore, results near zero indicate misalignment with the construct.

Expected and observed point biserial correlations were reviewed to assess for item fit. A positive point biserial on items means they contribute to the measure, whereas negative correlations do not fit the variable and are recommended to be removed (Sondergeld & Johnson, 2014). Positive point biserial correlations constitute a relationship to the measure, indicating that actual item scores align with the average scores on the rest of the items (Ravand & Firoozi, 2016; Sondergeld & Johnson, 2014).

Step 3: Rating Scale Functioning (Substantive Aspect)

The substantive aspect of instrument validity relates to the alignment between instrument responses and their theoretical rationales (Messick, 1994). Messick further supports the aspect of substantiveness as the use of theories rather than professional judgment to build empirical evidence while examining correlation patterns, response consistencies, or other task-related processes. The substantive aspect of construct validity is supported by demonstrating monotonic functioning and reviewing theoretically conceptualized predicted and demonstrated item difficulty (Smith, 2001). Monotonicity has been defined as a "good enough" person fit approach when using Rasch methods (Emons et al., 2004; Walker & Wind, 2020). The process involves reviewing a person's response patterns and reinforces the concept that item meaning or difficulty is not the same for every respondent (Sijtsma & Meijer, 1992).

Item polarity and category probability curves were conducted in Winsteps® to determine the monotonic functioning of the pilot survey. Monotonic functioning was initially conducted by examining item polarity to ensure the correct order of response categories. Monotonic functioning is seen when the respondents can discriminate between all response options, and

97

item difficulty is within the predicted theoretical conceptualizations (Linacre, 2006b). Issues with item polarity are encountered when the observed response in one category is lower than the next lower category. As supported further by Linacre, there is concern with item polarity when abilities or perceived responses are lower between groups than they should be.

Next, category probability curves tested the discrimination of the response scale. The inspection of category probability curves involves examining category thresholds to determine how response probabilities are arranged (Andrich, 1988; Linacre, 2006; Robinson et al., 2019). The probability curves depict the most probable response category, and the arrangement of response probabilities should be in ascending order with the categories. The probability of a response in any category depends on the locations of all thresholds, not just the ones defining the category. As supported by Stolt et al. (2022), "the shape of the distribution and number of responses in each category should be uniform, normal, bimodal, with slightly skewed distributions" (p. 2). Furthermore, a minimum of 10 responses for each category are considered adequate for measurement (Linacre, 1999).

Step 4: Person Fit (Substantive Aspect)

Reviewing how persons fit the Rasch model also supports the substantive aspect of validity during new scale development. Person fit takes into account how well responses to survey items fit the Rasch model. When the responses to an instrument align with the developer's intentions, it demonstrates substantive construct validity (Messick, 1995). When exploring person fit, item content and processes are used to account for observed item response consistency patterns, including anticipated response patterns (Chong, 2022; Wolf & Smith, 2007). Boone et al. (2014) suggest reviewing misfitting responses as too large of a number may indicate an influencing factor on instrument measurement. Person misfit occurs when response patterns are

outside of what is predicted by the model (Boon et al., 2014). Misfitting also occurs when respondents with high ability levels incorrectly answer one or more items. If responses are overfitting, they are too predictable, and underfitting responses are considered unpredictable. When applied to survey instruments, a person's ability and probability of endorsing items are key considerations when examining person fit or misfit. Person-fit statistics supported the quality of this instrument by pointing out respondents who do not exhibit expected answering patterns (Boone, 2014). Person fit indices are reported as outfit mean-square values. When calculated, responses suggest whether the MNSQ values are occurring by chance. Unusual patterns, such as extreme scores, could suggest students may have guessed or were careless with their responses. As defined by Boone as a quality control step, students exhibiting unusual answering patterns should be excluded from the analysis.

Step 5: Reliability and DIF (Generalizability Aspect)

Reliability analysis addresses the internal consistency of survey items by examining the characteristics, attitudes, or qualities intended to be measured (Fowler, 2014; McCrae et al., 2011). Survey responses from a select population should transfer meaning to other similar populations if they are to support future reliability and generalizability findings. Person reliability is an indicator of item internal consistency and can be interpreted similarly to Cronbach's alpha. Rasch reliability analysis to produce estimates for empirical evidence to support measurement consistency (Boone et al., 2014; Wolfe & Smith, 2007; Youngerman et al., 2021). Rasch methods use person reliability scores which are similar to Cronbach's alpha in that scores closer to 1.0 suggest a higher degree of internal consistency (DeVellis & Thorpe, 2021; Linacre, 2018).

Since generalizability relates to the degree of correlation between tasks being assessed and other tasks or aspects of the construct (Messick, 1994), Differential Item Functioning (DIF) was used to examine differences in measurement across all types of nursing students. Differential item functioning (DIF) can be perceived as a way to examine item bias. DIF analysis is a judgment-dependent process involving selecting specific comparison groups, choosing criteria to match respondents, applying statistical procedures to identify DIF, computing indexes, and interpreting results (Jin et al., 2013). Item bias can occur when different groups with similar underlying characteristics within a sample respond differently to a single item (Pallant & Tennant, 2007). If DIF is present, another variable may be influencing responses, and the measures produced cannot be trusted. Using the analogy of a blood pressure cuff, a cuff has to be the appropriate size for an individual if the results are to be considered accurate. Individuals whose arms do not fit the cuff correctly will have inaccurate measurements. A cuff that is too large for the individual will underestimate the reading, while one that is too small will produce false higher results. Interpreting results obtained from using the wrong instrument size might lead to providing unwarranted and unnecessary medical treatment. Similar to using the correct blood pressure cuff, DIF is used to evaluate whether the instrument and its measurements are reliable for everyone the survey is intended for.

DIF is one way to evaluate how individuals from different groups respond to survey items. Differential Item Functioning (DIF) addresses the functionality of items across groups. As supported by Linacre (2002), whether one group succeeds more on an item is not DIF; it is when one group succeeds more or less on an item than the group's overall ability or predicted item results. If we see things that vary, we have DIF, meaning the instrument is not measuring the same for everyone in the sample. Since the pilot survey was administered to nursing students, it

could be assumed that all students would respond to survey items similarly. Furthermore, nursing students who took the survey were enrolled in three types of nursing programs, so examining responses for potential bias was essential. It was hypothesized that nursing students from all three programs would respond similarly to responses regardless of the type of nursing program. If responses vary significantly among groups, the items may not be suited for all types of nursing students enrolled in various nursing programs.

Step 6: Person-Item Map (External Aspect)

Examining the functionality of individual items supports the external aspect of construct validity. Messick (1994) defines the interpretability or external aspect of construct validity as the "extent to which the assessment scores relationships with other measures and nonassessment behaviors reflect the expected high, low, and interactive relations implicit in the theory of the construct being assessed." (p. 16). The external aspect of construct validity examines an instrument's scores and tests its relationship with other constructs (Messick, 1995; Wolfe & Smith, 2007; Youngerman et al., 2021).

Person item maps were used in Winsteps® to explore the external or interpretability aspect of construct validity. Rasch methods produced person item maps to examine the alignment of the respondent with item level difficulty. Person scores were transformed into the same scale to determine item difficulty, which can then be mapped along a trait continuum (Boon et al., 2014). Ideally, persons mapped to the left side should be distributed or spread out from top to bottom, and those on the right side should be spread out with no overlapping items in one area. Respondents with lower abilities were displayed toward the bottom of the map, while those with higher abilities were located at the top. "When measures fail to meet the criteria for item and person separation, it is likely due to the fact that items are not sufficiently different in

terms of difficulty levels and that they do not match all the ability levels represented among the respondents (Van Zile-Tamsen, 2017, p. 931). Using guidelines from Boone (2016), when inspecting how persons matched item responses, items below the group measure are ones that could predict the nursing students to answer correctly. In contrast, items above the post average line predict the nursing students not to answer correctly." (Boone, 2016).

Limitations

To conclude this chapter, I would like to address the limitations that relate to the findings. First, survey responses were obtained from a census sample of students attending nursing programs from across three states located in the Midwest region of the US. Limiting responses from one geographical location may not provide adequate national representation. Nursing students from other parts of the nation may have different expectations of the nursing staff, especially if they engage in experiences with other organizations. This leads to the second limitation, which is organizational bias. Having the survey distributed by the organization where all experiences occurred introduces organizational bias. The survey invitation to students indicated the organization would use responses to inform future practices. Furthermore, questions on the survey included identifying information, such as their age, the year they are in a nursing program, the type of program, the geographical location of the clinical site, and the type of practice area where experiences occurred, which diminished anonymity. With identifying information being present, students considering the administering organization as a future employment choice may be more conservative with their responses or choose responses to support how they think the organization would want them to be answered.

Another limitation is that the organization instructed students who had engaged in more than one experience to formulate survey responses for one clinical experience. Since clinical

experience occurs at varying locations and with different nurses, other experiences that were not reflected upon may have contributed differently to the results. Furthermore, it is unclear how students chose which clinical experience to base their survey responses on. Receiving results for one clinical experience limits the amount of information that could be used to provide a broader perspective of all experiences.

Generalizability involves more than having an adequate sample population size. Messick (1989, 1995) describes generalizability as a way to make interpretations that can be applied across similar settings, populations, or tasks. For example, knowing the sex, race, and ethnicity of respondents may assist with generalizing this target population to other populations. For this study, demographic data included the student's age, the type of nursing program the student is enrolled in (LPN, ADN, or BSN), and the total number of attended clinical experience hours. A suggestion for adding gender to the demographic section to support generalizability claims was introduced. The hospital research team did not support adding additional demographic items other than the student's age in years. In their rebuttal, they questioned the value of adding these items and had concerns about extra items being sensitive to the students and that they might interfere with completion rates. Adding a gender option and additional suggestions to include race and ethnicity may have provided information to support response correlations. The literature reviewed the importance of recognizing and supporting diversity and inclusive practices. Not knowing gender, race, and ethnicity limits the ability to generalize findings to nursing student populations. While limiting the amount of demographic information such as age and gender has been identified as a means to protect student participant identity (Kaiser, 2009), this delimitation may limit the extent to formulate generalizability claims.

Chapter Conclusion

The purpose of this chapter was to describe the methods used to perform preliminary statistical testing of a pilot survey instrument measuring nursing student perceptions of nursing staff behaviors during clinical learning experiences. Messick's aspects of construct validity supported preliminary piloting and psychometric testing, which align with the first phase of Russell's Justification of Use mode. A multifaceted approach to examining construct validity ensures that the necessary criteria are present to support how an instrument is used. More detailed results of the analysis are presented in the next chapter.

CHAPTER 4: RESULTS

This chapter provides the results of the methodological approaches described in Chapter

Three. Russel's Justification of Use framework and Messick's construct validity aspects guided

the methods used and presented in this section. Analyses were conducted with the Rasch

Andrich-Wright Rating Scale Model (RSM), and all extreme respondent scores (35% of the

original sample) were excluded. The Rasch RSM was chosen for its specificity in analyzing

ordinal data in rating scales, such as Likert scales, which present the same response format

(Linacre, 2000a; Wright & Masters, 1982). Extreme or "perfect" scores were removed as the

results imply an infinite estimate, which can distort the data (Boone, 2014; Linacre, 1994).

Instrument reliability was adequate, with a person reliability of .89 and item reliability of .94.

Results from Rasch analysis methods provide evidence to support the structural, content,

substantive, generalizability, and external aspects of Messick's construct validity.

Step 1: Parallel Analysis and EFA (Structural Aspect)

The structural aspects of construct validity were assessed with parallel analysis (PA) and

exploratory factor analysis (EFA) using StataCorp STATA® 18.0 software. These steps were

taken to examine the unidimensionality of the 15 survey items relating to inviting nursing staff

behaviors construct. Exploring unidimensionality was necessary since the themes of welcoming,

supported, inspired, and valuable resource, were used to define inviting behaviors construct and

guided item pool development. First, a PA was conducted to determine the number of factors to

extract in the EFA. Since items within the pilot survey were new, EFA was chosen over

confirmatory factor analysis (CFA). Variables were extracted using principal axis factoring

followed by an orthogonal varimax rotation. Next, EFA was conducted on the polychoric matrix

to identify which items measured the same latent construct. This step assisted with identifying

whether the items covaried with one another and were reflective of the underlying latent variable

(DeVellis, 2017). Performing additional statistical analysis beyond EFA assists with confirming

the underlying variables. Criteria for factor retention included 1) eigenvalues greater than one, 2)

analysis of scree plot to visualize if there were any retained variables before the change of

direction on the graph, and 3) parallel analysis (Horn, 1965; Lacey et al., 2021). Following

retention recommendations, the value of 0.3 was used to determine appropriate factor loadings

(Brown, 2015; Costello & Osborne, 2005). All survey items presented with loadings greater than

0.85, suggesting factors were not distinct from each other and could be combined. The results

indicated the retention of one factor with items measuring one continuous latent construct. Factor

loadings are located in Table 4.1.

Figure 4.1.

Parallel Analysis of Survey Items

Parallel Analysis
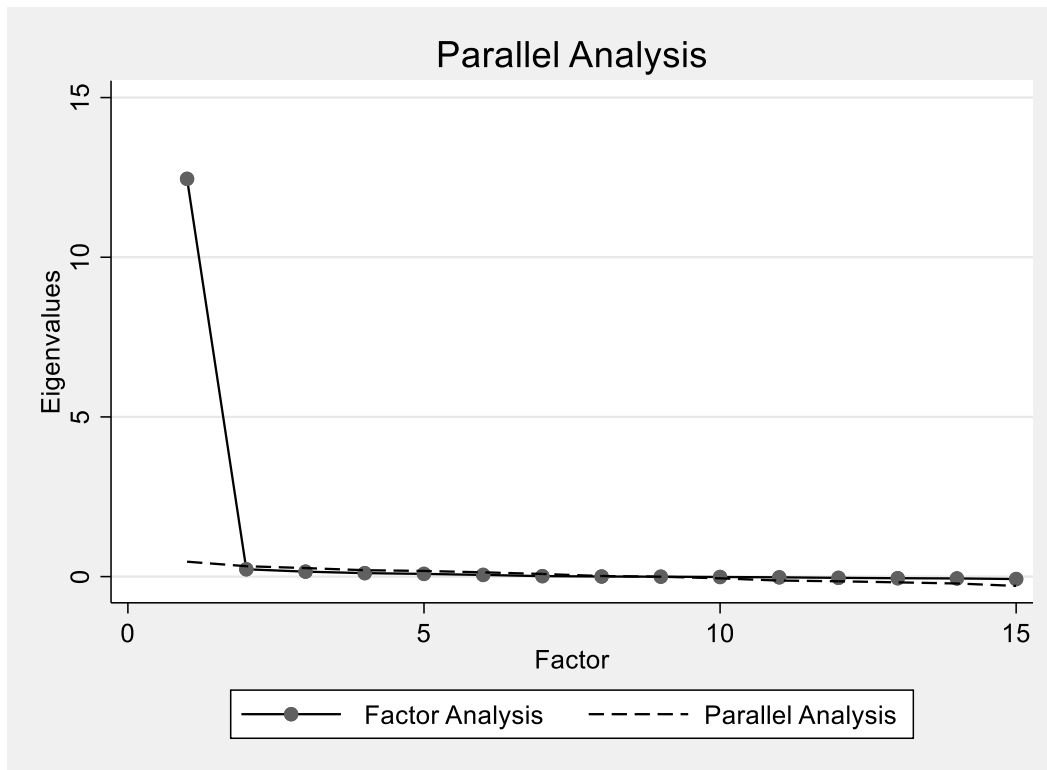
Table 4.1.

Factor Loading with Individual Item Loading for the Exploratory Factor Analysis

Survey Items	Factor Loading
Acknowledged my presence	0.92
Welcomed me	0.93
Included me in the plan of care	0.89
Encouraged me to ask questions	0.9
Assisted me in achieving learning goals	0.93
Provided opportunities to practice skills	0.8
Helped me determine appropriate patient priorities	0.89
Guided me through situations that I was unfamiliar with	0.9
Demonstrated ways I could succeed	0.91
Served as positive nursing role model	0.96
Interacted with me respectfully	0.94
Supported me in a professional manner	0.96
Answered my questions and concerns	0.93
Helped me become better prepared to be a professional nurse	0.96
Inspired me to become (organization) nurse	0.82

Step 2: Item fit (Content Aspect)

Item fit statistics with Rasch methods support construct validity by examining the quality
of items (Chong, 2023). Survey responses that do not fit the Rasch model may be a reflection of
poor item construction, mis-keying, or local item dependence (Ravand & Firoozi, 2016). Table
4.2 displays the MNSQ results in descending order, item infit, outfit, and point biserial
measurements. Bond and Fox (2015) recommend point-biserial correlation to be greater than 2.0
as this parameter supports not having data entry mistakes or miscoded items. The outfit MNSQ
values for all items fell below the recommended 2.0 logit productive measurement threshold. In
addition, the observed and expected point biserial results aligned similarly, and all items
correlated at a positive 0.87 or greater. The observed and expected point-biserial correlations
remained within the recommended 0.15 upper limit (Boone et al. 2014).

Table 4.2.

14- Item Statistics: Misfit Order

Item Label	Score	Count	Measure	Model S.E.	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD	Observed Point-Biserial Correlation	Expected Point-Biserial Correlation
Included me in the plan of care	383	139	1.160	0.16	1.52	3.90	1.46	3.00	0.87	0.91
Helped me determine appropriate patient priorities	389	139	1.010	0.16	1.25	2.00	1.27	1.90	0.89	0.91
Acknowledged my presence	436	139	-0.240	0.17	1.06	0.60	1.26	1.60	0.88	0.89
Guided me through unfamiliar situations	443	139	-0.450	0.17	1.13	1.00	1.01	0.10	0.87	0.88
Demonstrated ways I could succeed	378	139	1.280	0.16	1.12	1.10	1.10	0.70	0.90	0.91
Encouraged me to ask questions	440	139	-0.360	0.17	1.07	0.60	1.11	0.70	0.88	0.88
Welcomed me	431	139	-0.100	0.17	0.96	-0.30	1.00	0.10	0.89	0.89
Assisted me in achieving learning goals	414	139	0.370	0.16	0.87	-1.10	1.00	0.00	0.91	0.90
Interacted respectfully	452	139	-0.730	0.18	0.95	-0.40	0.80	-1.00	0.88	0.87
Positive role model	418	139	0.260	0.16	0.84	-1.40	0.90	-7.00	0.91	0.90
Helped me prepare to be a professional nurse	436	139	-0.240	0.17	0.85	-1.20	0.71	-1.90	0.90	0.89
Answered my questions and concerns	466	139	1.210	0.19	0.75	-1.80	0.62	-1.70	0.89	0.86
Overall satisfied	440	139	-0.360	0.17	0.69	-2.70	0.60	-2.80	0.90	0.88

Step 3: Rating Scale Functioning (Substantive Aspect)

Rating scale functioning was assessed with polarity statistics and probability curves to support the substantive aspect of construct validity. All items exhibited monotonic functioning for the rating scale categories with no response category misorder when compared to the respondent's abilities. These results suggest each level of the rating scale is strongly associated with a higher level of agreeability with items. Polarity statistics are presented in Table 4.3.

Table 4.3.

Polarity Statistics

Item Label	Data Code	Data Count	Data Percent	Mean Ability	Mean S.D.	Mean S.E.
Included me in the plan of care	.					
	1	7	3%	-6.56	2.78	1.14
	2	11	5%	0.03	2.37	0.75
	3	37	17%	1.99	2.34	0.39
	4	50	22%	4.49	1.48	0.21
	5	118	53%	7.75	1.48	0.14
Guided me through unfamiliar situations	.					
	1	5	2%	-8.25	0.62	0.31
	2	10	4%	-1.87	1.31	0.44
	3	17	8%	1.07	2.22	0.55
	4	41	18%	3.27	1.46	0.23
	5	150	67%	7.17	1.83	0.15
Acknowledged my presence	.					
	1	42	51%	-7.66	1.90	1.10
	2	15	18%	-2.66	2.59	0.78
	3	10	12%	0.67	1.31	0.35
	4	10	12%	3.78	1.57	0.22
	5	6	7%	7.26	1.81	0.15
Encouraged me to ask questions	.					
	1	50	60%	-6.72	2.49	1.02
	2	16	19%	-3.39	0.77	0.44
	3	6	7%	0.88	1.59	0.36
	4	9	11%	3.45	1.80	0.26
	5	3	4%	7.25	1.78	0.15

Table 4.3.

Polarity Statistics Continued)

Item Label	Data Code	Data Count	Data Percent	Mean Ability	Mean S.D.	Mean S.E.
Interacted with me respectfully	.					
	1	6	3%	-7.52	1.73	0.77
	2	5	2%	-2.86	0.78	0.39
	3	18	8%	0.63	1.83	0.44
	4	41	18%	3.02	1.49	0.24
	5	153	69%	7.13	1.83	0.15
Answered my questions and concerns						
	1	5	2%	-8.25	0.62	0.31
	2	3	1%	-3.06	0.60	0.42
	3	14	6%	-0.80	1.99	0.55
	4	45	20%	2.66	1.33	0.20
	5	156	70%	7.11	1.81	0.15
Helped me determine appropriate patient priorities						
	1	6	3%	-7.36	2.08	0.93
	2	9	4%	-2.07	1.56	0.55
	3	35	16%	2.41	2.14	0.37
	4	58	26%	4.20	1.57	0.21
	5	115	52%	7.84	1.37	0.13
Welcomed me						
	1	6	3%	-7.60	1.56	0.70
	2	9	4%	-1.66	1.49	0.53
	3	17	8%	0.83	1.82	0.46
	4	52	23%	3.64	1.54	0.22
	5	139	62%	7.37	1.69	0.14
Helped me become better prepared to become a professional nurse						
	1	6	3%	-7.60	1.56	0.70
	2	8	4%	-2.01	1.56	0.59
	3	24	11%	1.19	1.53	0.32
	4	36	16%	3.27	1.28	0.22
	5	149	67%	7.26	1.68	0.14

Table 4.3.

Polarity Statistics (Continued)

Item Label	Data Code	Data Count	Data Percent	Mean Ability	Mean S.D.	Mean S.E.
Demonstrated ways I could succeed						
	1	6	3%	-7.60	1.56	0.70
	2	14	6%	-0.76	2.00	0.56
	3	37	17%	2.43	2.03	0.34
	4	50	22%	4.38	1.21	0.17
	5	116	52%	7.88	1.29	0.12
Overall satisfied with clinical						
	1	8	4%	-6.55	2.29	0.86
	2	6	3%	-1.90	0.96	0.43
	3	16	7%	0.63	1.36	0.35
	4	46	21%	3.19	1.22	0.18
	5	147	66%	7.31	1.65	0.14
Served as positive nursing role model						
	1	9	4%	-6.14	2.45	0.87
	2	9	4%	-1.04	1.11	0.39
	3	17	8%	1.18	1.23	0.31
	4	53	24%	3.82	1.44	0.20
	5	135	61%	7.48	1.58	0.14
Assisted me in achieving learning goals						
	1	7	3%	-7.00	2.07	0.84
	2	6	3%	-2.59	0.66	0.30
	3	25	11%	1.42	1.75	0.36
	4	58	26%	3.96	1.50	0.20
	5	127	57%	7.61	1.51	0.13
Supported me in a professional manner						
	1	5	2%	-8.25	0.62	0.31
	2	6	3%	-2.76	1.20	0.54
	3	22	10%	0.50	1.69	0.37
	4	45	20%	3.30	1.25	0.19
	5	145	65%	7.35	1.61	0.13

Probability curves were generated to show the likelihood of responses for each item response option (Van Tile-Tamsen, 2017). The probability curves located in Figure 4.2 are relatively symmetrical and have a representative order among the ordinal numbering of categories with substantive meaning (Linacre, 1999). Upon examination, categories peak and go back to the bottom, and every curve has a region represented by a hill, which is ideal. No curves are buried under other curves, indicating there are not too many response options, and there is no need to remove or add any categories. The categories emerged with similar symmetrical peaks corresponding to the appropriate threshold, and there was an increase of at least one logit with the observed average and Andrich thresholds, supporting a monotonic increase (Bone & Fox, 2007 & Aryadoust et al., 2014). Table 4.4 displays the observed average scores and expected sample scores. The observed average scores are close to their expected scores, which suggests a lack of substantive construct-irrelevant factors influencing response patterns (Aryadoust et al., 2014). Results indicate all categories had a similar probability of being selected, there was an adequate number of response categories, and the response scale worked appropriately.

Figure 4.2.

Category Probability Curves for Response Categories (RSM)
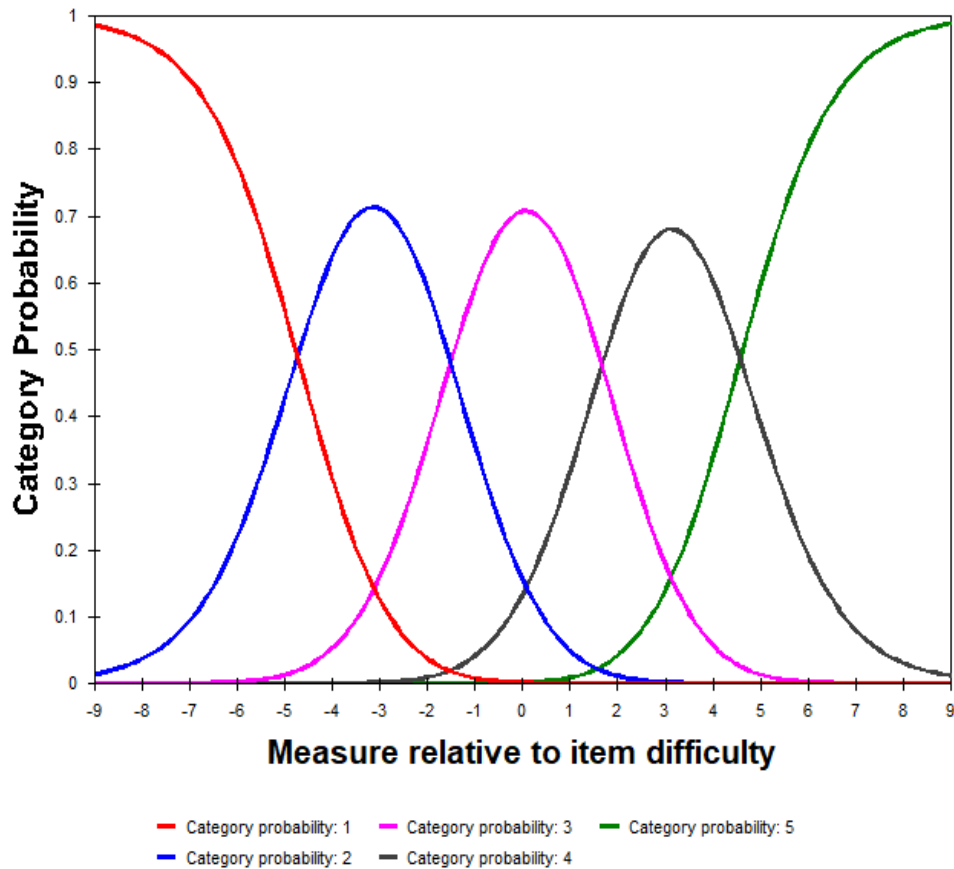
Category meaning: Category 1 indicates (Strongly disagree), category 2 indicates (Disagree), category 3 indicates (Neither agree nor disagree), category 4 indicates (Agree), and category 5 indicates (Strongly agree).

Rasch Andrich thresholds are reviewed when assessing how a category functions by identifying "location on the latent variable (relative to the center of the rating scale) where adjacent categories are equally probable" (Kean et al., 2018, p. 91). It is essential to review the order as disordered thresholds indicate response category problems. When examining rating scale design, thresholds located in the same place relative to item difficulty for all items are ideal for Likert scales where the structure of responses is expected to be the same (Linacre, 2012). An

ordered category implies that the categories have been numbered in a way that suggests a higher number correlates to more of the latent variable (Linacre, 2002).

The Andrich RSM model was used to generate rating scale diagnostics and reliability indices to support psychometric quality (Van Zil-Tamson, 2017). The Rasch-Andrich thresholds are equivalent to the item difficulties for the model. Following recommendations of difference between each adjacent threshold of at least 1.2 logits and at most 5.0 logits, the Rasch-Andrich model results fell within these parameters and are ordered with the lower threshold being smaller than the larger one. The generated model indicates responses for each item were viewed similarly by all students. Category responses fell within expected zones, meaning the respondents' ability level falls within the Rasch model response expectations.

Table 4.4 displays a summary of response category structure. Each category contained between 87 and 1936 observations, with the lowest observations in category label one and the highest in five. The frequency of observations met the recommended parameters for having a minimum of ten observations (Bond and Fox, 2007; Linacre, 2002). The observed ability measure examines all responses for each category. The results of the observed values for all categories align with the Rasch model's expected average ability measures. This finding supports desired response behaviors. Additionally, the observed average displayed monotonicity with an ordered and consistent increase across categories.

Table 4.4.

Summary of Response Category Structure

Category Label	Observed Frequency	Observed Percent	Observed Average	Sample Expect	Infit MNSQ	Outfit MNSQ	Andrich Threshold	Category Measure
1	87	3	-5.91	-5.98	0.97	0.97	NONE	(-5.86)
2	112	4	-1.98	-2.08	1.08	1.06	-4.73	-3.13
3	314	10	1.10	1.10	1.16	1.17	-1.51	0.08
4	673	22	3.59	3.67	0.92	0.85	1.67	3.13
5	1936	62	5.77	5.72	0.91	0.92	4.58	-5.72

Step 4: Person Fit (Substantive Aspect)

Since Rasch methods view persons and items exactly the same, recommendations from Wolfe & Smith (2007) were used to evaluate the standardized MNSQ person fit indices to ensure the "degree to which the observed responses for a person were in accord with the model-based expectations" (p.211). Items were reviewed and deleted to fit the Rasch model while maintaining person and item reliability indices. After examining item and person reliability scores and outfit MNSQ values, 89 persons underfitting (high MNSQ) and overfitting (low MNSQ) were deleted to fit the Rasch model, resulting in a total of 223 person responses and 14 items fitting the model. The 89 misfitting responses were from 66 BSN, 14 ADN, and 9 LPN students. The removal of misfitting items resulted in output MNSQ scores ranging from .59 to 1.46, which is within the recommended parameters for items fitting to the Rasch model. A Chi-Square analysis was performed to assess the relationship of responses for students enrolled in the three types of nursing programs. This aspect was examined since students from a BSN program with more clinical hour requirements with nursing staff may have responded differently. Results from the Chi-Square test of independence were not significant ($\chi2(4) = 8.319$; $P = 0.81$), indicating there was no relationship between the scores of students from the three types of nursing programs.

Step 5: Reliability and Item Difficulty (Generalizability Aspect)

Person reliability scores are an indicator of internal consistency to support generalizability claims. Two types of person reliability limits, model and real reliability scores, were evaluated using Table 3 in Winsteps®. Winsteps® uses model reliability, whereas model reliability is the upper limit and real reliability is the lower limit (Boone, 2014**).** Person reliability scores less than 0.9 suggest the person sample is not large enough to confirm item difficulty hierarchy (Linacre, 2006c). The real reliability was 0.95, and model reliability was 0.96. Person reliability scores are listed in Table 4.6.

For this analysis, DIF was used to explore changes in item comprehension for nursing students enrolled in BSN, ADN, and LPN programs. Using Table 30.1 in Winsteps®, the DIF size for observed and expected measures did not produce a significant change in DIF size. Mantel Chi-square probability scores, which align with double-sided t-tests, were not statistically significant in that no results were less than .05, indicating no response bias. A display of how each group responded is presented in Figure 4.3.

Since DIF examines how items perform for different populations to produce generalizability claims, reviewing the number of student responses from the three nursing programs was essential. Extreme scores were removed before performing DIF measures since the lack of response variation provided no useful information (Boone, 2014). There was a total of 84 (30%) recorded extreme scores for all responses, of which 81 (96.4%) chose all maximum (Strongly agree), and three (1.3%) chose all minimum (Strongly disagree) responses. A breakdown of extreme responses was recorded from 66 BSN, 6 ADN, and 13 LPN students. Persons fitting, misfitting, and recorded extremes are listed in Table 4.5. The remaining 139-item person response consisted of 112 BSN, 19 ADN, and 8 LPN students (Table 4.5). Deleting these

extreme scores from the Rasch model is significant in that the reduction in numbers for each

group hindered statistical power to detect DIF at this point. The removal of extreme scores was

significant and contributed to not having statistical power to detect DIF at this point.

Table 4.5.

Frequency (Percent) of Fitting, Misfitting, and Extreme Respondents by Program

	Fitting	Misfitting	Extreme	Total
BSN	112	66	66	244
	(35.8%)	(21.1%)	(21.1%)	(78.0%)
ADN	19	14	6	39
	(6.0%)	(4.4%)	(1.9%)	(12.4%)
LPN	8	9	13	30
	(2.5%)	(2.8%)	(4.1%)	(9.6%)
Total	139	89	84	313

Table 4.6.

Rasch Model Summary Statistics

	Raw Score	Count	Measure	Model S.E.	Infit MNSQ	Infit ZSTD	Outfit MNSQ	Outfit ZSTD
Mean	56.9	14.0	3.55	0.57	1.01	0.1	0.96	0
Person S.D.	11.9	0.0	2.93	0.16	0.32	0.9	0.3	0.8
Maximum	69.0	14.0	7.37	1.05	1.99	1.9	1.57	1.6
Minimum	15.0	14.0	-7.49	0.46	0.42	-1.9	0.42	-1.9
Real Separation Model	4.53	Real Person Reliability	0.95					
Model Separation	4.82	Reliability	0.96					

Figure 4.3.

Person Differential Item Functioning
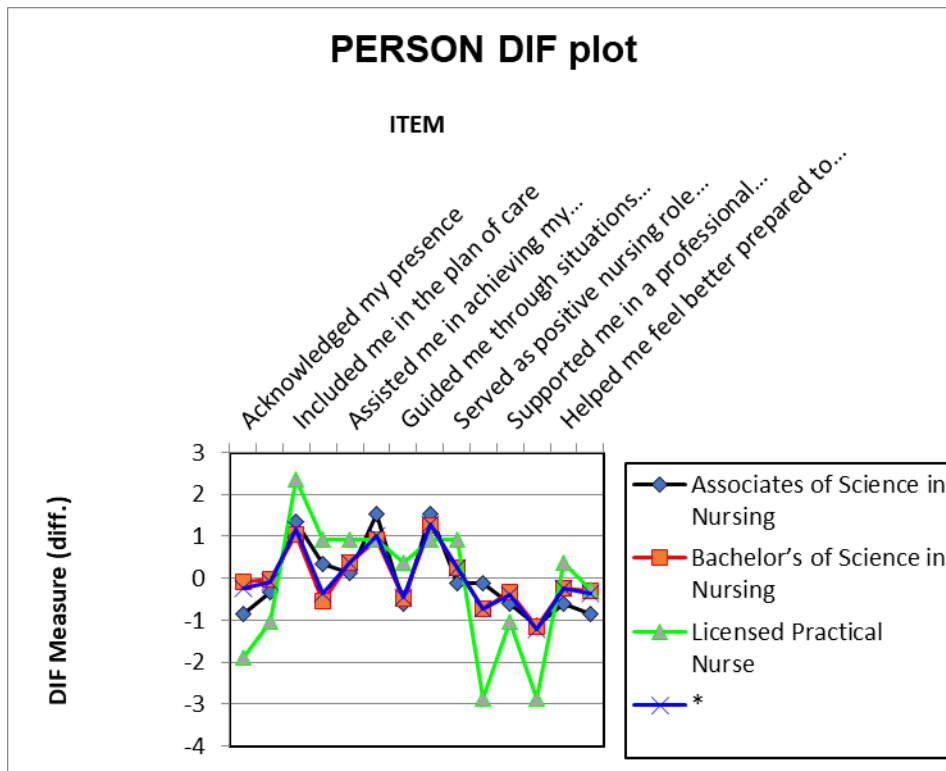
Step 6: Person-Item Map (External Aspect)

A Wright Map was used to confirm students' ability levels in three types of nursing programs. The Wright Map displayed survey items on the right and the individual's abilities on the left. Respondents with lower abilities were displayed toward the bottom of the map, while those with higher abilities were located at the top. Student responses were not evenly distributed on the Wright map, with most responses mapped at 1.0 logit or higher and a majority of student responses representing outliers at +8.0 logits. The higher number of persons at +8.0 logits represents higher abilities or more endorsement of the latent trait. These results suggest most respondents had high ability and were agreeable with items.

The mapped items were distributed evenly between -1.5 and 1.5 logits, with a majority located near -.5 and +1.0 logits. Item overlap occurred at -.5, 0.0, and 0.5 logits. The overlap of

items suggests that items are similar to each other and redundant. Furthermore, the consolidation of items with logits close to zero indicates items are not well spread out in their level of agreement. These results suggest items, especially those that overlap, should be reviewed and possibly rewritten, and new items could be explored to create a broader logit spread.

The Andrich-Wright map was used to explore how well items fit the Rasch model and assess for floor and ceiling effects (Dahl et al., 2023). The plotted vertical values ranged from -8 to 8 logits. The right side of the map displays items located at points of equal probability of adjacent categories at the lower edge of each rating probability zone (Linacre, 1999). The majority of items fell between -1 and – logit. This finding suggests a redundancy of items. Figure 4.6 displays the Andrich-Wright map showing the measurement of all item response categories (Linacre, 2018). Person scores, located on the left side of the map, indicated that most students fell into a high ability rating, meaning they could easily endorse survey items. The clustering of items and lack of distribution created a ceiling effect, suggesting additional items are needed to improve overall scale functioning. Figure 4.4 displays person responses to observed categories. The person and measure means were misaligned with student abilities, which were recorded much higher than the mean distribution of items. Furthermore, ceiling effects are represented by the majority of persons at the top of the person measure range without items. The reduction was significant enough to suggest there were not enough items that varied in difficulty levels to support validity claims. Figure 4.5 displays the discernment of items.

Figure 4.4.

Person Count to Item Count

Figure 4.5.

Person Item Discernment

```
Expected Scores: score-point measures and peak category probabilities, ":" half-point measures (illustrated by an Observed Category)
-8    -6    -4    -2     0     2     4     6     8
|-----+-----+-----+-----+-----+-----+-----+-----|  NUM    ITEM
1         1  :    2   :     3    :    4      : 5   5     9  Demonstrated ways I could succeed in this organization
1         1  :    2   :    3    :     4      : 5   5     3  Included me in the plan of care
1        1  :     2   :     3    :    4      :  5  5     7  Helped me to determine appropriate patient priorities
|                                                  |
|                                                  |
1      1  :     2    :     3    :    4     : 5    5     5  Assisted me in achieving my learning goals
1     1  :      2    :    3    :     4    :  5    5    10  Served as positive nursing role models
|                                                  |
|                                                  |
1     1  :      2    :    3    :     4    :  5    5     2  Welcomed me to my clinical experience
1    1  :      2    :    3    :    4    :  5      5     1  Acknowledged my presence
1    1  :      2    :    3    :    4    :  5      5    14  Helped me feel better prepared to become a professional nurse
1   1  :      2    :    3    :    4    :  5       5     4  Encouraged me to ask questions
1   1  :      2    :    3    :    4    :  5       5    16  Overall, I was satisfied with my clinical experience.
1   1  :      2    :    3    :    4    :  5       5    12  Supported me in a professional manner
1   1  :      2    :    3    :    4    : 5        5     8  Guided me through situations that I was unfamiliar with
|                                                  |
1   1  :    2     :    3    :    4    : 5         5    11  Interacted with me respectfully
|                                                  |
|                                                  |
1 1  :      2   :     3    :    4    : 5          5    13  Answered my questions and concerns
|-----+-----+-----+-----+-----+-----+-----+-----|  NUM    ITEM
-8    -6    -4    -2     0     2     4     6     8

                                    1    1   8
3 2         11 1 1 3 11 221 1 42643374228177736 77 4  8 1  PERSON
                T            S            M
0                          10    20    30 40 50 60  99  PERCENTILE
```

122

Figure 4.6.

Wright Map Indicating Level of Agreement and Person Response on Same Continuum

```
MEASURE     PERSON - MAP - ITEM - Andrich thresholds (modal categories if ordered)
              <more>|<rare>
   8  .############  +
                  |
             .#   |
   7              +
            ##    |
             S|
   6         #  +                                      Demonstra .5
             #  |                                      Helped me .5
                                                       Included  .5
             .  |
   5         .# +                                      Assisted  .5
                                                       Served as .5
            ##  |
             #  |                                      Acknowled .5
                                                       Encourage .5
                                                       Helped me .5
                                                       Overall,  .5
                                                       Supported .5
                                                       Welcomed  .5
   4         .  +                                      Guided me .5
                                                       Interacte .5
            .# M|
             .  |                                      Answered  .5
   3         .  +                     Demonstra .4
             .  |                     Helped me .4
                                      Included  .4
             .  |
   2         .  +                     Assisted  .4
                                      Served as .4
             .  |                     Welcomed  .4
            .#  |T                    Acknowled .4
                                      Encourage .4
                                      Guided me .4
                                      Helped me .4
                                      Overall,  .4
                                      Supported .4
   1         .  +                     Interacte .4
             . S|S
             .  |                     Answered  .4
   0            +M
             .  |         Demonstra .3
                          Included  .3
             . |S         Helped me .3
  -1         .  +         Assisted  .3
             . |T         Served as .3
             .  |         Acknowled .3
                          Helped me .3
                          Welcomed  .3
  -2            +         Encourage .3
                          Guided me .3
                          Overall,  .3
                          Supported .3
             . T|         Interacte .3
                |         Answered  .3
  -3         .  +
             .  | Demonstra .2
                | Helped me .2
                  Included  .2
  -4         .  +
             .  | Assisted  .2
                  Served as .2
                | Welcomed  .2
  -5            + Acknowled .2
                  Encourage .2
                  Helped me .2
                  Overall,  .2
                  Supported .2
                | Guided me .2
                  Interacte .2
                |
  -6            + Answered  .2
                |
                |
  -7            +
             .  |
                |
  -8         .  +
              <less>|<freq>
EACH "#" IS 7: EACH "." IS 1 TO 6
```

Key: Each # represents 7 respondents and each represents 1-6 respondents

123

Chapter Conclusion

Messick's aspects of content validity supported the use of Rasch methods for examining the psychometric properties of a pilot survey aimed to explore student perception of nursing staff while engaging in clinical experiences. While structural and content aspects indicate the instrument is measuring what it is intended to measure, there are limitations for supporting substantive and generalizability claims. The next section provides a more thorough discussion of these results, in addition to addressing limitations that support recommendations for future research.

CHAPTER 5: DISCUSSION

The purpose of this study was to examine the psychometric properties of an instrument designed to explore nursing student perspectives of the inviting behaviors of nursing staff during clinical experiences. The methods used to determine construct validity were guided by educational theories and instrument development measures. Messick's construct validity aspects aligned with Rasch methods to support research implications. Results from the Rasch analysis are intended to justify validity and reliability claims. When construct validity measures are met, the instrument can be deemed useful and reliable for obtaining the perspectives of nursing students enrolled in more than one type of nursing program. Having a valid tool for measuring student perspectives of the inviting behaviors of nursing staff will provide essential information to support an inviting and supportive clinical learning environment.

The final chapter of this study includes 1) a summary and discussion of Rasch construct validity findings, 2) implications for theory and practice, and 3) suggestions for future research. The summary and discussion section will review the findings and their relationship to the aspects of construct validity. The last two sections will thoroughly discuss survey applications for descriptive and research purposes and suggestions to support future research focusing on survey development.

Summary of Findings

This study used Rasch methods to examine several aspects of construct validity. Results from the Rasch analysis align with Messick's content, substantive, structural, and generalizability constructs for investigating construct validity claims. The results of the performed analysis support the content and structural validity of the pilot instrument. The substantive aspects indicate limitations for future use of the instrument and opens a discussion platform to examine the survey method process and explore future research opportunities.

125

Finding One: Unidimensionality of the Instrument

The first noteworthy finding from this study is that the items chosen for piloting from the expert review process were unidimensional and fit the Rasch model. The assumption of unidimensionality is necessary before Rasch analysis can be performed (Wright & Stone, 1979). Exploring the unidimensionality of items supported how the underlying defined themes of students feeling welcomed, supported, and guided by a knowledgeable and positive role model overlapped and aligned to one factor. Although careful attention was given to the item pool selection process by reviewing the defining themes and corresponding literature, there was no guarantee all chosen items would align on one construct. Results from the PA and polychoric EFA supported the structural aspect of validity by confirming all survey items related to one construct. Had unidimensionality not been met, items would have had to be reexamined and possibly omitted. With items being unidimensional, Rasch measures could be performed to examine the essential aspects of construct validity.

Finding Two: Theoretical Alignment

Several aspects of construct validity were used to support the purpose phase of Russell's Justification of Use model. It was hypothesized that nursing students from three types of nursing programs with varying amounts of education would understand the meaning of items similarly and that the response categories would be discerned equally. From a substantive aspect of construct validity, the pilot survey functioned as intended from a standpoint that items and corresponding response options were understood equally by nursing students enrolled in three types of academic programs. Category structure, item polarity, and person fit were examined to support substantive validity claims. Rasch analyses were performed with Winsteps® software, using the Andrich-Wright RSM approach to address the assumption that the distance between

126

response option categories was the same across all items (Youngerman et al., 2021). A review of category structure identified the pilot survey as having appropriate category measures with ordered low to high monotonic thresholds. Examining category probability curves was essential for ensuring the rating scale functions as intended and students responded similarly to items. Having similar responses among the three groups of nursing students suggests all respondents comprehended items well.

Item polarity statistics also supported the substantive aspects of construct validity by demonstrating all students responded similarly and could discern between the five response categories. Having similar responses among groups suggests all respondents understood the questions at an equivalent level. Overall, the substantive aspects of construct validity were met, suggesting items on the survey were functioning appropriately for this sample of students. Furthermore, there were no statistically significant differences in the mean ability of all responses, demonstrating no response category misorder. As defined by Linacre (2002), when data fits the Rasch model, positive polarity correlations are expected as they represent a relationship between higher-valued responses and the person measures. Although the pilot instrument expected and observed point biserial results indicated five items under-discriminated and six over-discriminated, the difference was not significant to suggest respondents misunderstood the items.

Finding Three: Instrument Reliability and Generalizability

A review of how persons fit the model by examining person misfit via output MNSQ values supported the substantive and content aspects of construct validity. Adequate person fit indices were examined to review how items fit the Rasch model while maintaining person and item reliability values. Examining items that did not fit the model ensured items were of sufficient quality to be interpreted as interval-level measures (Bond & Fox, 2007). The output MNSQ fit indices were used to guide item selection measures that could be used to produce meaningful results that aligned with the unidimensional construct. From an empirical perspective, fitting items to the Rasch model and reviewing person item responses provided evidence for moving beyond theory. Although persons fit the model and reliability scores supported this claim, other aspects put into question how generalizability claims could be made.

The generalizability aspects of construct validity took into account how well the survey instrument performed for all types of nursing students and whether the results could make future inferences. The Rasch measurement model assists with determining whether there are enough items spread along the continuum, as this supports a strong person reliability index. (Sondergeld & Johnson, 2014; Wright & Masters, 1982). The person reliability index was used to explore expected future results if the same items were administered to similar populations. Since the instrument is intended for obtaining responses from more than one type of nursing student, examining how each group of students responded to items was necessary before the piloted instrument could be considered valid and reliable for measuring student perceptions of inviting nursing staff behaviors. From a theoretical perspective, Differential Item Functioning (DIF) was performed to examine how item performance among the three groups of nursing students supported generalizability claims. Similar responses from the three groups could have implied

that the survey is useful for students in more than one type of nursing program. DIF statistical significance is influenced by the size of the DIF effect, the size of classification groups, and model fit (Linacre, 2002). Statistical significance occurs when there is a failure of invariance, meaning the statistical foundation for inferences is not identical across all respondents within the specified context (Linacre, 2006a). Since nursing students who responded to the survey were enrolled in three types of programs, it was essential to review their responses for potential measurement bias.

Preliminary findings suggested that at face value, the instrument appeared to not demonstrate DIF in that responses to items were similar among groups. A surprising result impacting DIF results was that 84 (30%) of the 223 persons who fit the model recorded extreme scores for all responses. Extreme high and low response scores do not provide useful data to support how an instrument is functioning and these scores were not included to avoid analysis distortion (Boon et al., 2014). For pilot testing, Linacre (2002) considers at least 30 responses to be adequate for examining item responses. Although the resulting total sample number of 189 person-to-item responses used to fit the Rasch model exceeded the recommended 30-item response suggestion, removing extreme responses adversely affected the ADN and LPN groups. Before persons were fit to the model and extreme responses were removed, there were a total of 244 responses from the BSN group, 39 from the ADN group, and 29 from the LPN group. With a higher overall response rate from the BSN group, the removal of extreme scores for this group was not significant. This suggests a larger survey response pool from the ADN and LPN groups would have provided more useful data to make inferences among the three types of nursing programs. Since de-identified survey results obtained for analysis did not include information regarding how many students from each program were invited to participate in the pilot survey, it

129

is unclear if these response numbers reflect the student populations. Until an adequate pool of

persons from each group is obtained, there is no way to make any inferences on these potential

claims. Another aspect to explore regarding extreme scores includes the possibility of other

influencing factors that may have affected how students chose to respond to items. Extreme

scores may have been selected due to all items being too easy or too similar, suggesting

redundancy, which assumes a normal distribution of learning experiences. The majority (96.4 %)

of extreme score responses were recorded as strongly agree. These extreme highly agreeable

responses could be an accurate reflection of how students perceive their interactions during a

chosen clinical experience with nursing staff members. Furthermore, with higher agreeability

being associated with a greater sense of belonging, more investigation into the inferences of

extreme scores is needed, especially if these responses suggest students' positive, inviting

behavior practices. Having one or more groups respond differently from the other might suggest

items are being interpreted or understood differently or that the relationship with nursing staff

members might be perceived differently. Gaining a deeper perspective into why students chose

extreme response options through focused group meetings or by providing more survey options

for students to expand on survey response choices should be explored.

Although DIF could not be detected due to the removal of extreme scores, there were

observable trends suggesting all students responded similarly and were highly agreeable with

responses. With items being mapped at a low difficulty level, which translates to being easy to

understand and less defined, these results are not surprising, and any inferences should be used

cautiously. It is not to say that easily understood or highly agreeable items should not be

included in survey instruments. A cautionary implication rests with how many items are at this

level and whether they adequately define that underlying construct. For DIF to be performed

adequately, more survey items that define the unobserved variable need to be added and then compared by student groups.

Conceptually, DIF provides evidence to support group comparisons. Items functioning similarly for all students enrolled in three types of nursing programs lends evidence to suggest instrument usability for students enrolled in more than one type of nursing program. Although students from different types of nursing programs may engage in similar clinical experiences with similar staff and location, the defining aspects of inviting practices may differ. Identifying difference in responses among groups might suggest the need to modify survey items, or indicate the instrument is appropriate for specific student groups. Without having the statistical power to detect DIF, reliability and generalizability claims are limited. You can still see group differences even if items don't fit the model well (Tesio et al., 2023); however, small group sizes limit the statistical power to provide accurate and interpretable results. Overall, the reduced ADN and LPN student group totals used for the final analysis resulted in a loss of statistical power to detect DIF accurately at this point. After modifying and adding items, re-examining responses with Rasch methods will need to occur before the survey can be deemed valid and reliable for use for one or more types of nursing programs. Since extreme score responses contributed to a significant reduction of items to limit DIF analysis, a better understanding of the percentage of students from each type of program, plus a close examination of survey items, is essential. A significant change in item agreement might signify a problem with item structure or could indicate experiences are perceived differently. The exploration of these types of findings will provide value to future research efforts to better understand how all types of students perceived the inviting behaviors of nursing staff during clinical experiences.

Finding Four: External Aspects

Locating how student abilities were mapped to item responses assisted with examining the external aspect of construct validity. The Wright map provided a visualization to examine how student abilities aligned with their responses. As supported by Bond and Fox (2007), estimates of person ability and item response-ability are meaningful if every survey item contributes to the measure for a single attribute. In theory, there should be a span of varying difficulty of items mapped against a person's abilities (Linacre, 2005). Results demonstrated that persons who fit the Rasch model exhibited high ability scores, which were misaligned with survey items mapped as being easy with similar meanings. Additionally, the majority of students chose a higher extreme response score, indicating a strong level of agreement with most items.

The basic principles of Rasch modeling conclude that more able or higher-ability persons will be more likely to answer items more positively (agreeable), and easier items are more likely to be answered similarly by all persons (Bond & Fox, 2007). The Rasch model identified items as being easy to understand by respondents. From this perspective, having highly agreeable response scores is not unexpected, with items being easy when compared to the mapped ability levels. Boone et al. (2014) suggest having survey items that would be agreeable to all types of students, but there should be varying perceptions of agreeability. The items on the Wright map were identified as being too easy or redundant and should be carefully reviewed or replaced with items that encourage students to pause and think before responding. Responses did support a high level of agreement, but with several items being similar to one another, it is difficult to make any inferences about what these results imply. If the goal is to promote a positive and inclusive learning environment for nursing students, wanting to know more about how they perceive learning experiences is essential.

Examining the high person ceiling effect was critical for understanding what researchers consider a good "easier to most difficult" distribution of items among respondents (Boone et al., 2014). For there to be implied meaning from survey scores, results should be obtained from response patterns that define the variable (Wright & Smith, 2007). Having multiple items located at the mean suggested redundancy and poor test-item targeting (Linacre, 2000b). Using an analogy introduced by Bond and Fox (2007), the spread of items across a continuum can be thought of as a staircase. If the staircase is missing steps, or if there are too many gaps between each step, the staircase is not functioning well for everyone, it is not productive for use and needs to be mended. Focusing on this analogy, the Wright map demonstrates there are not enough steps, with most steps being at the bottom of the staircase. Without an appropriate amount of well-constructed items (steps), the goal of adequately measuring the construct is missed (Linacre, 2006b).

Since person abilities are theorized during survey construction, having a broad range of survey items with varying difficulty or defining terminology toward the construct assists with a better understanding of what types of questions can be used for multiple types of nursing students. The Rasch model ranked items from low (easier) to higher (harder) difficulty, which can be translated into items describing the construct better than others. Additionally, the model associated higher agreeability responses with an increased sense of belonging. A larger item pool containing more meaningful statements would provide a broader spectrum for defining the inviting behaviors construct. Items that students were more agreeable with to correlate a higher meaningful rank to describe the inviting behaviors construct included "helped me determine appropriate patient priorities," "assisted me in achieving my learning goals," and "demonstrated ways I could succeed." By expanding upon and defining what students consider appropriate

patient priorities, what constitutes learning goals, and what types of actions demonstrate ways to succeed, new survey items can be created to solicit more purposeful and informative responses. It is not enough to know if students are merely satisfied. Taking an intentional approach to creating survey items intended to define the construct and match theory predictions is necessary for results to be deemed useful.

The mismatch between person measures (ability) and item difficulty, plus the redundancy of items, lends evidence that items in the pilot survey were easy to comprehend and that there are opportunities to add items of more value to measure the overall construct. There are a few possible reasons for the high person ceiling effect, which opens the door to making necessary adjustments to the instrument to reduce redundancy and extreme responses. While scales measuring satisfaction can provide targeted information for supporting expectations, ceiling effects have conceptual and methodological issues (Caronni et al., 2023). Boone (2016) considers the misalignment of person and item means as evidence to support poor test-item targeting. This misalignment calls into question whether there are enough items to accurately measure inviting behaviors. Re-examining and modifying the pilot survey is necessary to be able to perform DIF on future versions of the survey. It is crucial to evaluate how well items are defining a variable as this lends strength to support instrument use (Boone, 2014). The high person ceiling effect supports options for reviewing and deleting some of the redundant items and exploring more items that align with the respondents' ability level.

Although one of the goals of this project was to explore the psychometric properties of a new instrument, it is important to point out that there is no universal definition of validity, which brings forth careful consideration for how results are shared. Survey responses can be taken at face value alone when using descriptive assessment practices. Focusing on the large number of

recorded extreme responses, Wright and Smith (2007) warrant the temptation to interpret highly agreeable extreme responses without questioning the quality of all items. "Until the instrument contains the most meaningful survey items possible for the underlying variable, possibilities exist for other items that could measure the variable more effectively" (Wright & Smith, 2007, p. 48). From a research perspective, Rasch's methods provide a deeper dive into what response patterns mean and take into account errors that can occur from being careless or not understanding survey item intent.

Discussion Summary

Preliminary piloting and psychometric testing were performed in an attempt to validate a new instrument measuring the construct of inviting behaviors of nursing staff. Since this research project focused on the importance of validating the pilot instrument before making inferences for use, it was essential to examine more than one parameter relating to construct validity. Evidence collected by performing Rasch methods supports some but not all of Messick's (1995) aspects of construct validity. Four defining themes (welcomed, supported, inspired, and valuable resource) were used to describe the inviting behaviors construct and guide item pool development steps. Dimensionality was confirmed with all items on the instrument measuring one continuous latent construct. The scale functioned as hypothesized in that students from three types of nursing programs responded to items similarly and could discern among response categories. A surprising finding was the number of extreme scores, which decreased ADN and LPN group responses. Although it was hypothesized that the three types of nursing students would respond similarly, the intent was not to expect a large number of extreme response scores for all groups. The removal of persons from these two groups hinders the ability to use Rasch methods to adequately evaluate the presence of differential item functioning (DIF). Without adequate group

135

numbers, there was a loss of statistical power to make comparisons between the three student groups, limiting generalizability claims.

Another interesting finding was associated with the Wright map, which displayed a mismatch between person ability and item difficulty. A high person ceiling effect and lack of variability among items suggest items were easy and redundant. Without item difficulty variability, there is no way to review how students may have responded to different types of questions that align with their ability levels. This finding opens the door for making improvements and re-piloting the survey instrument. Exploring additional items will be necessary to define the underlying construct. With future testing, items that produce more variations in response patterns that are similar among groups might provide more evidence to suggest the survey items are measuring the intended inviting behaviors construct. If the purpose is to explore opportunities to enhance the clinical learning environment, there needs to be more information to define what those changes could be.

Beyond descriptive parameters, research findings do not support using results to make inferences or implications. From a research perspective, the pilot survey displayed many gaps that must be addressed before it can be considered valid and reliable. A broader foundation of survey items is necessary to understand better how students feel welcomed, supported, and inspired while viewing their nurse as a valuable resource.

Implications for Theory and Practice

This research study brought attention to collaborate academic-hospital practices involved with pilot testing an instrument exploring nursing student perceptions of nursing staff. As addressed in this study, when creating a survey instrument, nursing programs and healthcare organizations may share common goals to assist students with their learning but may differ in

136

how they create and use information obtained from survey responses. The collaborative partnership took a student-focused approach to better understand nursing student perceptions but differed in how survey information might be analyzed and disseminated. This section focuses on some of these differences and provides recommendations for future research.

Examining how the results define its intended purpose is essential for making validity claims. Validity is not universally defined, and evidence to support its claims has been based on many types of theories, empirical evidence, and logical arguments (Cizek, 2012). Understanding that validity could be explained in multiple ways opens the door to examining how results from the Rasch analysis might be utilized. Russell's (2021) justification of use model was used to guide the survey analysis process because it was modeled from Messick's (1989) aspects of construct validity. When validity claims come into context, Messick recommends asking whether the instrument is good enough to measure or assess what is intended and whether the results should be used for its intended purpose. The justification of use model reinforces the need to ensure an instrument supports the defined validity parameters. When considering how scores are interpreted, response value implications come into play. In the context of this research project, the endorsement of scores and interpretation of results are viewed differently from a research and assessment perspective. Using Russell's justification of use model and its alignment with Messick's unified concept of construct validity, more than one aspect of validity is needed to support making validity claims. Ensuring an instrument is valid allows inferences to be made and supports future use.

Results from the survey are currently being used to support decision-making efforts, and the hospital organization shares them with all nursing programs that place students within their facility. Since the hospital organization is using the results for assessment purposes, the

instrument is being perceived as functioning as expected in that it provides descriptive summative results. Until validity measures are established, making inferences from survey results should be done cautiously. Depending on the types and number of questions, the data from the results might only provide information for what an organization wants to hear. Examining the instrument's purpose will be essential if ongoing collaborative steps are taken. From an assessment perspective, the item responses will provide results for expected responses. Recognizing there were differences in perspectives regarding modifying the survey is important to highlight as it identifies some of the challenges and opportunities that can occur when engaging in collaborative practices. It also reinforces the need to clarify each party's intentions for survey development and intended use throughout the instrument development process. Moving forward, it will be essential to question the instruments' underlying purpose. If the intention is to produce change, there needs to be more information to suggest what those changes need to be.

Although the collaborative partnership for creating this survey took a student-focused perspective, there were clear differences in how the survey would be developed further. The first area that warrants attention relates to the number of survey items. The original survey consisted of six items designed to understand students' satisfaction with nursing staff during clinical experiences. From the hospital's perspective, the number of items was adequate and had been providing descriptive results for assessment purposes. Computing and combining scores have been identified as common practice when reviewing survey responses, which can result in distorted or misleading information (Bond & Fox, 2007). This perspective differs from taking a research focus to better explore the quality rather than quantity of items and responses. From a research perspective, using survey items to clearly define the underlying question is essential.

In its original form, the instrument was designed to support the hospital organization's needs and possibly identify areas for improvement. This narrow focus intentionally examined one essential aspect of the student's learning environment. Since nursing staff spend more time with nursing students during clinical experiences than other healthcare disciplines, it is not surprising that the instrument was created to focus on these relationships alone. By recognizing patterns with specific behaviors or actions, steps can be taken to praise good practices and identify actions or behaviors that need improvement. From a research perspective, taking a narrower perspective can assist with focusing on one aspect that aligns with one construct. Conversely, one cannot ignore that too narrow of a focus might limit the ability to identify many other aspects that could contribute to students' sense of belonging and what could be perceived as inviting or disinviting behaviors.

A narrower focus for examining the clinical learning environment limits essential information regarding student learning experiences that can look beyond nursing staff behaviors. Nursing programs have specific outcomes that must be met to maintain accreditation standards and often use student survey responses to support meeting these outcomes. If items are being used to meet these outcomes, the survey used for this study would need to be modified to include other aspects. The intent of the original survey was to for one hospital organization to use student responses to identify strengths and opportunities to support best clinical experiences within their organization. Responses are shared with partnering nursing programs by categorizing and summarizing findings. The sharing of results reinforces a common goal for better understanding the impact of nursing staff behaviors on student learning and can benefit organizations providing similar student clinical experiences.

The results from this study supported efforts to strengthen academic-healthcare partnerships by engaging in collaborative pilot survey development processes. Although academia and healthcare may differ in how to support validity claims, there are several advantages to creating student-focused cohesive relationships. Hospital organizations want to offer a welcoming environment to support future employment needs, and educational institutions must ensure that clinical experiences meet student and program outcomes. The question remains whether healthcare organizations and academic institutions can create a survey to measure inviting behaviors that benefit both. In my opinion, I believe this can happen if both types of organizations are willing to listen to each other and better understand how survey item responses might positively impact student experiences. A well-designed survey should be purposeful and produce results that can be used effectively. Since academic and healthcare organizations may have differing perspectives regarding what a positive student learning experiences should entail, examining and defining the intended purpose is essential for collaborative steps to occur. Moving forward, there are options for other organizations to take the survey and make advancements that could benefit academic and healthcare organizations. Although the original and modified survey items came from the hospital organization, no ownership claims exist. Since the survey in its existing form is not owned or copyrighted by any institution, it can be used, tested, or enhanced by others. Continued collaborative discussions are recommended to make decisions to support the best academic hospital practices while taking a student-focused perspective.

Recommendations for Future Research

This project highlights the need for researchers to use survey methods that are adequately designed, meaningful, and can provide feedback to support educational practices. Collaborative efforts were used to guide the piloting of a new survey instrument. Since the partnering

140

organization created the instrument, the restrictions, and expectations they placed were respected throughout the pilot development process. These limitations provide opportunities to expand future research. This was the initial phase and preliminary pilot testing of a new instrument, and there are steps that can be performed to create a more valid and reliable tool. This section identifies key areas of instrument development improvement that can support future best practices.

Survey Items

Reviewing the quality of and adding survey items is recommended to provide a broader range of questions to better understand the underlying construct. Survey responses from well-developed questions should create a strong relationship to support what the researcher is trying to measure (Fowler, 2014). From a methodological standpoint, careful construction of items is an essential component guiding survey development practices. Based on the Rasch model, items were easy to understand and redundant, suggesting there is room to add more items to define the construct better. Understanding more items needed to be added to the original survey instrument during early collaborative discussions was a pivotal moment for taking a research rather than a descriptive assessment perspective to explore validity and reliability claims. The definition of inviting behaviors is characterized by several factors that can and should be described in a way that encourages thoughtful answers. Although items in the pilot survey were intended to describe the underlying themes of welcoming, supported, knowledgeable, and inspiring and displayed unidimensionality, they did not measure the underlying construct well enough.

Another point to consider is that students did not contribute to the instruments item development process. Since this research project used responses from students enrolled in three types of nursing programs, one should not assume all nursing students have the same perceptions

141

of nursing staff roles, responsibilities, and expectations. Taking a pragmatic approach toward survey development and refinement ensures students' perspectives are considered and that the items make sense to them within this particular context.

When creating a new instrument, research supports starting with a larger item pool (DeVellis, 2017). There were many other great items included in the initial item pool that I wanted to include, which were declined by the hospital team to limit the number of survey items in support of higher response rates. The original pool items can be re-explored, or existing items can be defined further to support more meaningful responses. Asking broader questions about what we want to know and how much we want to know could be an underlying theme for guiding survey advancement efforts. Additionally, attention to quality should take precedence over quantity, especially in these early development phases.

The majority of survey items on the pilot survey were considered to be simply structured and easily understandable and may have contributed to extreme response scores. Since extreme response scores are considered invaluable for measurement when performing Rasch analysis, examining these items is essential. Understandable and easy-to-understand items that may be regarded as redundant can be eliminated or replaced with other value-added items that can provide more robust information about the underlying construct. More questions that take a deeper dive into describing expected role model and mentoring behaviors are needed to provide evidence to support ongoing clinical learning practices.

Recognizing the misalignment between person ability and item difficulty, along with many extreme score responses, brings forth the discussion of construct misspecification. Construct misspecification occurs when "important aspects of the construct affecting performance are not included in the measurement process" (Cizek, 2012). The advantage of

142

identifying construct misspecification is that any errors or limitations can be used to improve measurement design or refine theory. If the instrument is to become reliable, it must first be deemed valid. Since Rasch methods could not confirm all aspects of construct validity, it is necessary to engage in the next steps to review and revise items before re-piloting. These next steps can be taken with the partnering organization in this study or independently.

The construction of items is also an area that could be explored further. Although some negatively worded items were part of the initial survey item pool, all final items in the pilot survey were positively worded. Positive and negative framed items might encourage respondents to pause and think rather than choose one extreme response category. Maeda (2014) suggests that negatively worded items and reverse scoring reduce item selection bias. Additionally, the construction of some of the items in the original pool could be reviewed and restructured to encourage more thoughtful and meaningful answers. Another suggestion is to add more open-ended responses to promote the expression of thoughts and expand upon survey responses.

Student Focused Groups

Although the instrument was designed to gain a better understanding of student experiences, students themselves were not a part of the development process. Academic and corporate leaders may have different inviting behaviors and perspectives than students. Additionally, what might be perceived as essential from a healthcare or academic perspective might differ from students' perspective. Fowler (2014) recommends focus group discussions, which should include sharing perceptions and related experiences to what is being measured in the survey. Future research practices could support this step by inviting students from LPN, ADN, and BSN nursing programs who have engaged in hospital clinical experiences with the nursing staff. A student-focus review would provide additional feedback to enhance survey item

143

clarity, readability, and overall relevance. With items for the pilot instrument being created by a team of licensed nurses who are not students, obtaining information from students could have provided more insight into what inviting practices mean to them or what they expect from the nursing staff during clinical experiences. Engaging in focus group discussions could provide more discussions regarding what students' value and expect from nurses during clinical experiences. Since the survey takes a student-focused perspective, conducting a student-focused group can assist with developing items that are meaningful and essential for positive learning experiences. The aligning of these perspectives can support the development of a survey instrument that benefits students and organizational institutions.

Something else that could be considered for review during the student-focused group session is to explore how students perceive how their responses will be used. If students believe their responses are valued and will make a difference, more might choose to complete the study, positively influencing response rates. This piloted survey instrument was modified from a tool created from a healthcare organization's perspective, and it was clear that responses would be used within its organization. If the survey is meaningful to the student and results produces actionable change rather than supporting organizational assessment needs, responses might be recorded differently. As the limitation section identifies, personal identifiers are provided with survey results to the hospital organization, reducing anonymity. The hospital organization does not use student names when presenting data but does include student program information to compare geographical locations and clinical sites. Using identifying information such as this could pose limitations for how students respond or when taking the survey. Conversely, intentionally selecting students who chose extreme response options for a focused review session could uncover valuable information for a better understanding of why options were chosen.

144

Taking a broader approach to understanding the meaning behind extreme score responses might reinforce analysis results or provide other plausible explanations. Overall, information obtained by conducting cognitive interviews with students will assist in many ways with guiding future survey item selections while taking a student-focused perspective.

Re-test

There are opportunities to re-examine how the construct was defined, re-visit the item pool, and look for new items that might provide more detail about what students expect from nursing staff during clinical experiences. After conducting these steps and performing a focused survey review with nursing students, the recommended next steps are re-administering the revised survey tool to support future test-re-test reliability measures and performing additional statistical analysis to confirm instrument validity after these measures have been completed.

Healthcare organizations and nursing programs may share different perspectives regarding how a survey instrument is created, analyzed, and results are used. When reviewing or creating a survey, the intent must be clear. Results may provide evidence that may not describe a construct effectively but instead provide responses that display what an organization wants to hear. The survey's purpose must be examined first to understand what items to choose and what information is expected. Rasch analysis methods assisted with understanding how a new instrument could be used. From a research perspective, this in itself is not enough to support construct validity claims. The items need to challenge students' thinking so that they pause, reflect, and make intentional choices. Additional refinement of the tool needs to happen to ensure the construct in its entirety is being measured effectively. These recommended next steps support taking a research approach for enhancing the nursing student clinical experience survey.

Sample Comparisons

Demographic information collected from students as part of the survey process could be used for group comparisons to support external validity aspects. First, correlations between the number of completed clinical hours and student response rates should be explored. Depending on the location of the clinical site, the length of one clinical experience can range from one to twelve hours. As the number of clinical experience hours increases, students are exposed to more opportunities to engage in practices with nursing staff members and at different sites. Having experiences with more than one staff nurse or at different clinical sites provides students with more options to base their survey responses on. In addition, since the pilot survey for this study was administered by one hospital organization, students attending more than one clinical experience may be more familiar with the organization's policies, procedures, equipment, and underlying culture. Students who are more familiar with organizational and clinical environment practices might experience a sense of comfort or belonging depending on the interactions with nursing and other staff members during these experiences. Another comparison to be explored includes examining responses from students who engaged in clinical learning experiences as part of a group or individually. Depending on the type of nursing program, students completing clinical experiences with other nursing students as part of a group are often under the direct supervision of a nurse educator and staff nurse. Conversely, students engaging in precepted and practicum experience do not have a nursing instructor with them and receive individual direct supervision by a licensed RN. Furthermore, preceptorships and practicum experiences are provided to students who have met specific course requirements and may be further along academically from other students. Lastly, between and within group comparisons could be performed from responses of students enrolled in different academic semesters or terms.

Students further along in their academic studies will have had more classroom, and clinical educational experiences at more locations and with more staff nurses. By exploring potential response differences, researchers will gain a better understanding of what factors might influence students' survey response choices. Gaining a better understanding of the many factors that might influence survey responses will support making generalizability claims.

Explore Healthcare Teams

Although this study focused on the student perceptions of staff nurses, modifying the instrument to gain a broader understanding of the inviting practices of other healthcare team members could be explored. Nurses are a part of an interconnected team composed of various healthcare disciplines who must work together to provide safe and effective patient care. The roles and responsibilities of healthcare team members vary; however, effective communication and respectful interactions are an expected norm. Exploring inviting practices from all persons interacting with students during clinical experiences could provide valuable insights for a better understanding of who and what influences students' sense of belonging. A multidisciplinary approach to better understanding student perceptions of inviting practices could also improve the versatility of the survey if items are designed to be used by more than one type of healthcare-related student. Examining the inviting practices of others does not need to be limited to one type of student. By creating a more versatile instrument, academic institutions and healthcare organizations can obtain a broader picture of the many factors influencing student learning.

CONCLUSION

This research study explored the psychometric properties of a new instrument, and results were used to examine several aspects of validity. Following the guidelines of Russell's (2022) Justification of Use model, an instrument must be deemed valid and purposeful before making inferences or generalizability claims. This research project took a unique collaborative academic-healthcare approach towards examining, expanding, and piloting a survey to measure a new instrument for nursing student perceptions of inviting practices of nursing staff during clinical learning experiences. Initial expert panel review discussions entertained possibilities for creating a survey instrument that took a student-centered approach and could be used to support academic and hospital assessment practices. Ongoing discussions assisted with clarifying the pilot survey's intent, selecting the appropriate measures, aligning research questions, conducting effective pilot testing, and using results to perform psychometric testing. Survey response results assisted with exploring several aspects of validity while identifying different perspectives for how results might be used.

Before survey modification steps could take place, it was essential to examine the many influencing factors associated with nursing students' clinical learning environment. Collaborative academic-hospital relationships are necessary for providing effective and supportive student learning environments. Accrediting bodies such as the American Association of Colleges of Nursing (AACN) encourage strong academic healthcare partnerships that foster essential educational practices for student learning. Healthcare organizations offer locations for students to apply their learning, allowing nursing students to actively participate in hands-on activities while experiencing a glimpse of how they will be working in the nursing profession. Having positive clinical experiences not only supports the application of knowledge but also provides a means to inspire and encourage students to become future nurses. From an academic perspective, clinical

148

experiences are essential for students to apply what they are learning, and they often rely on nursing staff to guide students. From a healthcare organization's perspective, these interactive experiences introduce students to a new work culture. If nursing students are to understand better what is expected of them when they graduate, they need to be provided with guidance and support from academic and healthcare organizations.

With students being the key stakeholders, the environment where classroom knowledge is applied and synthesized must be continually evaluated. The healthcare landscape is evolving, and many aspects affect this ever-changing process. From a systems-based perspective, personal attributes such as skill and confidence levels, relationships with all those involved in the student experiences, and environmental factors such as an organization's culture should be considered when examining student outcomes (Astin, 2012). Additionally, the environment should consider how an individual invites, inhibits, reacts to, explores, and engages with others (Bronfenbrenner, 1993; Purkey & Novak, 1988, 1991). Bronfenbrenner's ecological systems theory was used to describe the student learning environment as being multifactorial with overlaps of many types of influencing traits. Since nursing students engage in clinical learning experiences in an environment different from what they experience with family, friends, and the classroom, understanding the influencing factors within this environment is essential. When students shift from an environment they are familiar with to a new one, they are exposed to new ways of learning modeled by others. Having positive learning experiences facilitates learning and introduces students to a new culture. As identified by Pukey and Novack (1996), intentional and unintentional practices can affect one's sense of belonging. Gaining a better understanding of inviting and uninviting practices is necessary, especially in an ever-changing healthcare environment. By providing a safe, welcoming, and inclusive environment, students can better

149

understand their role when they graduate and how they can reciprocate these types of experiences when they are in the nurse role and guiding students. Exploring nursing students' perceptions of nursing staff during clinical experiences with survey methods is one way to gather helpful information to support healthy learning environments.

The interactions between students and mentors within the clinical environment are instrumental in creating a sense of belonging that supports students' present and future development as professional nurses. Students are guided by nursing staff while actively engaging in the real-world practice setting where great learning and not-so-great learning experiences occur. The nursing profession has been notably recognized as a demanding and stressful occupation. Staff nurses who are often required to precept nursing students while orienting new employees and providing patient care have reported high stress levels and burnout (Shah et al., 2021). Although preceptor training and pay incentives are ways for hospital organizations to support their nursing staff, these interventions may not be enough to offset the demands of the nursing profession. If nursing staff feel overworked and stressed, they may not want to engage in positive mentoring practices, which could negatively impact student learning or make students question their decision to become a nurse.

Nursing programs provide students with opportunities to evaluate their faculty in both the classroom and clinical environment. Because nursing programs place a high value on the learning that occurs in both the classroom and clinical learning environment, everyone involved in this process should be evaluated. Since nursing staff also facilitate learning within the clinical setting, it seems inherent to want to understand how students perceive these experiences. Constant evaluation of learning practices is critical for ensuring the advancement of student knowledge in a safe, caring, and inviting environment. The clinical learning environment gives

students a "snapshot" of what it might look like to be a practicing nurse. Suppose the student feels welcome, included, and supported by nurses and other healthcare team members. In that case, they may wish to remain in the culture of this environment as they transition from student to professional nurse.

Understanding the impacts of the CLE and the nurse's role as a mentor and guide in this environment assists with identifying factors contributing to student success while recognizing areas for improvement or change. Examining the impact of the staff nurse on student experiences within the CLE with a valid and reliable survey instrument is one way to ensure that future experiences continue to be effective and valuable to every key stakeholder involved. Just as a pediatric blood pressure cuff is created for and intended only to be used by children within a specific height and weight frame, survey instruments are often calibrated to target a specific population. The instrument used in this pilot study was intentionally created to target a census sample of nursing students to better understand experiences with nursing staff during clinical experiences. As an educator and researcher ensuring the correct instrument is being used is essential for producing results that can be interpreted correctly. Similar to using the correct blood pressure cuff, improper use of an instrument will provide information that might be considered useless or misleading.

Before engaging in survey modification steps, several instruments were explored for possible use in lieu of developing a new survey. Some of the survey instruments explored aligned with the defined inviting behavior construct; however, none were specific enough to align with the hospital organization's intentions for examining how students perceived nurses as being welcoming, supportive, inspiring, and valuable resources. Additionally, several instruments took a more generalized academic perspective. Expanding beyond the literature

151

review, other survey instruments, such as the Belongingness Scale Clinical Placement Experience (BESCPE) instrument, were also considered for their focus on evaluating the perceived belongingness of nursing and medical students during clinical experiences (Qureshi et al., 2018). Similar to other surveys that related directly to nursing students' sense of belonging during clinical experiences, items in the BESCPE took a student-focused perspective; however, its underlying factors contained differing constructs, such as feeling accepted, isolated, and part of a relationship. Reviewing several survey instruments aligned similarly to the underlying construct reinforces that many ways to view a student's learning environment exist. Overall, the approach taken for coordinating pilot survey development steps with the hospital research team limited the use of other types of surveys as viable options.

Evaluating student performance and perceptions of their learning environment is highly dependent upon student feedback that can be attained through survey methods. The survey instrument used for this research project was administered to nursing students enrolled in Associate, Bachelor, or Licensed Practical nursing programs across a Midwest region of the United States. Students attending clinical experiences at various locations with one hospital organization were asked to complete the survey. Rasch methods were performed and guided by Messick's (1994) aspect of construct validity. This approach was chosen as it aligns with Russell's (2022) Justification of Use model. For an instrument to be useful, its purpose must be defined through validity measures. Rasch methods were used to perform psychometric testing from 314 responses. High and low fitting items and extreme response scores were removed, resulting in 189 persons who fit the model. Results from the Rasch analysis indicate the piloted survey was constructed well so that nursing students could discern items and response categories that were appropriately aligned. The survey's item range of difficulty was mapped against

student abilities, and suggested items were easy compared to ability levels. Furthermore, several items overlapped in their meaning, suggesting redundancy. Generalizability claims were examined to better understand how students from three types of nursing programs responded. The removal of extreme scores reduced student numbers from two of the three groups, resulting in a loss of statistical power to make generalizability claims. Because the student learning environment is unique and ever-changing, the type of survey used and the results they produce need to be constantly examined. The instrument used in this study was created with a more specific purpose than existing tools, which often explored more than one construct and took a broader academic-centered perspective. Taking a more narrow and detailed approach allowed this research project to focus on performing preliminary piloting steps and psychometric testing to explore validity measures before staking generalizability claims. Engaging in collaborative practices created a unique survey development process perspective.

Continuous improvement involves critical self-reflection of current approaches to engage in ongoing communication and forge collaborative partnership pathways (Keeling, 2007). Examining how survey responses are interpreted calls into question how results will be used. Kezar (2018) identified that "part of the difficulty of creating change is realizing that people are interpreting their environment so differently from one another" (p. 54). In an ever-changing healthcare environment where individuals are influenced by many system-wide processes, constant evaluation of student performance and the factors that affect them are essential. Whether using an existing survey instrument or creating a new one, the population being surveyed and the context of the environment where experiences occur need to be considered. Feedback obtained from a well-designed survey instrument provides objective evidence to support best practices.

Academic institutions must provide students with learning opportunities that involve direct patient care, and these experiences occur through strong partnerships with healthcare organizations. By providing students with the best possible clinical learning experiences guided by nursing role models, academic and healthcare organizations are contributing a message that their process to becoming a nurse is valued. Taking collaborative steps to create a survey instrument whose results can be shared by other nursing programs and healthcare organizations is a unique way to develop and strengthen working relationships. Engaging in these types of practice partnerships creates a bridge for students to apply theory into practice while providing staff nurses opportunities to become involved with and informed of students' educational needs (Pedregosa et al., 2020). With an ongoing nurse shortage, examining how nursing students are being prepared for professional practice becomes a vested interest of both nursing programs and healthcare organizations.

Using an instrument that supports academic and healthcare organizations is plausible if the intent of use is evident. Understanding the survey's purpose is an essential initial step for ensuring an instrument is valid and that the results obtained can be used to provide clear interpretations and support future decisions and actions (Russell, 2022). Creating an effective survey is an intentional process that can provide valuable information if an instrument is well developed. Results from this study support ongoing survey development efforts. From a research perspective, items must be expanded to explore more of the construct. Redundant items need to be removed and replaced by ones that match student ability levels. Furthermore, items need to be identified by both the surveyor and respondents as beneficial for supporting student needs that can lead to positive changes to support our future nurses. Revisions to the instrument will need to be guided by the literature review and reviewed against the theoretical framework. By taking a

154

student-focused perspective, academic and healthcare organizations can use survey methods to better understand the implications of nursing staff behaviors on students' sense of belonging and perceptions of the nursing profession. With a critical nursing shortage, expectations for creating a welcoming and inviting learning environment are essential to promote the nursing profession. Ultimately, results from this research project can be used to inform others of the value of comprehensive survey development. These findings reinforce the importance of engaging in effective survey development steps and adequate psychometric testing to ensure an instrument is well-developed and can be backed by credible validity and reliability claims.

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On Mar 19, 2023, at 5:51 PM, Brenda Happell <Brenda.Happell@newcastle.edu.au> wrote:

Hi Charys,

Yes by all means you can use the model as you see fit.

Best regards

Brenda

> -----Original Message-----

From: Kunkel, Charys <charys.kunkel@ndsu.edu>

Sent: Saturday, 18 March 2023 6:18 AM

To: Brenda Happell <Brenda.Happell@newcastle.edu.au>

Subject: Permission to use Preceptorship Model

Dear Dr. Happell,

My name is Charys Kunkel and I am a Doctoral student at North Dakota State University, North Dakota, US. As part of my Dissertation, I am collaborating with a healthcare organization to create a survey evaluating nursing student perceptions of the RN/Preceptor/ in the clinical learning environment. After reading several of your articles, I have found that the model you developed for preceptorship relates well to the survey we are developing and my research questions. The reason for this email is to ask permission to use the model you developed and to possibly modify it slightly to expand the definition of a RN preceptor. The survey we are creating will be sent to students who will either 1. have one RN assigned to them during their final practicum experience or 2. be a part of a group clinical experience where the staff nurse will serve as a guide, mentor, and role model.

I appreciate your consideration of my request and look forward to hearing back from you.

Sincerely,

Charys Kunkel, MSN, RN

NDSU Nursing at Sanford Health

Pre-licensure BSN Director and Assistant Professor of Practice NDSU

School of Education Student

701-###-####

APPENDIX B: PERMISSION TO USE JUSTIFICATION OF USE MODEL

From: Michael Russell <russelmh@bc.edu>

Sent: Tuesday, May 23, 2023 12:38 PM

To: Kunkel, Charys <charys.kunkel@ndsu.edu>

Subject: Re: Permission to use model for informing an integrated evaluative judgement

regarding an assessment

Charys-

Yes, you have permission to use that graphic with appropriate attribution. I am glad you found

this paper useful and I wish you well with your dissertation!!!

-Mike

Michael Russell

Professor

Measurement, Evaluation, Statistics and Assessment

Lynch School of Education and Human Development

Boston College

"When used properly and progressively, science, as a way of thinking, is useful for empowering

otherwise oppressed and marginal[ized] people…in their most humane manifestations, the

human sciences are supposed to be liberating and empowering, not oppressive or merely steps in

a career."

> — John H. Stanfield, II

Sanford Health Nursing Student Clinical Experiences Survey

Meeting One: Expert Review Panel

The purpose of this survey is: "to obtain feedback regarding student clinical experiences at Sanford to enhance the student experience, ultimately impacting workforce development."

Proposed instructions: Sanford Health is collecting feedback from students regarding their clinical experiences. Your participation is voluntary. Results from this survey will be used to enhance the nursing student clinical experiences and may be used to support future research efforts. Please rate the following items based on interactions with nursing staff from the department where you completed your clinical experiences.

Original Likert Scale: Not satisfied (1)---(3)Somewhat satisfied---(5) Extremely satisfied

Proposed Likert Scale:

○ Strongly disagree (1)

○ Disagree (2)

○ Somewhat disagree (3)

○ Somewhat agree (4)

○ Agree (5)

○ Strongly agree (6)

Defining Themes

A. <u>Welcoming:</u> (Sense of Belonging, Respect, Communication, Inclusion)

Current statement:

Welcomed to your clinical experience

Proposed additional questions to choose from:

1. The continuity of my learning experiences was ensured even when I did not work with my primary nurse.*

2. The nursing staff greeted me at the start of the clinical shift.

3. The nursing staff on this unit acknowledged my presence.

4. The staff was approachable.

5. I felt supported if I did not know how to do something.**

6. I felt comfortable asking questions.

7. I felt included by my nurse when prioritizing patient cares.

8. I felt ignored during my clinical experiences.

9. If my assigned nurse was busy, other nurses assisted me with providing patient cares.

10. My assigned nurse kept other staff aware of what I could do.*

B. Supported: (provided encouragement, displayed interest in assisting with learning)

Current statements:

Interacted with you respectfully

Supported you in a professional manner

Proposed additional questions to choose from:

(Will need to clarify singular/plural—plural if considering >1 experience)

1. My nurse (or the nursing staff) **encouraged** me to ask questions.

2. My nurse was **interested** in hearing my thoughts or ideas.

4. My nurse took the time to answer my questions.

5. My nurse was available to me during the clinical experience.**

6. My nurse demonstrated a willingness to help me achieve my learning goals.

7. I was provided with useful feedback regarding my performance.**

8. My nurse **included** me in the planning of patient care.

9. I sometimes felt that I was bothering the nursing staff.

10. I felt that my nurse did not want me around.

11. I felt supported in developing my delegation skills.

12. Nursing staff provided opportunities for me to enhance my communication skills with patients.

13. Nursing staff provided opportunities for me to practice skills (i.e., starting IV's, inserting foley catheters, etc.).

C. <u>Valuable Resource</u>: (the useful /helpful qualities and attributes of a person)

Current Statement:

Answered your concern/questions

Proposed additional questions to choose from:

1. I can see myself reaching out to my nurse preceptor for guidance in the future.

2. My nurse was knowledgeable of hospital policies and procedures.

3. My nurse encouraged me to use evidence-based practice *to make clinical decisions*.*

4. My nurse preceptor encouraged me to integrate evidence-based practice *into patient care*.*

5. My nurse helped me to determine appropriate patient priorities.*

6. My nurse provided me with the information I needed to care for my patients.*

7. My nurse guided me through situations that I was unfamiliar with.

8. My nurse taught me to ask questions (such as "what if…? Or "What could these symptoms mean?") as a way to develop my clinical reasoning skills.*

9. My nurse taught me how to use information technology for patient care.*

10. My nurse helped me to interpret clinical situations.*

a. My nurse provided me with **feedback** about my strengths.*

b. My nurse provided me with **feedback** about what I needed to improve.*

c. My nurse provided constructive **feedback** regarding my performance.**

D. Inspired to be (Hospital Organization)Nurse: (inspiration: a feeling, moved to action; promotes a sense of success)

Proposed additional questions to choose from:

1. The nursing staff helped me feel better prepared to become a professional nurse.

2. The nursing staff helped me understand what it means to be a nurse in this organization.

3. I can see myself working as a nurse within this organization.

4. Nursing staff shared ways I could succeed in this organization.

5. My nurse had a positive attitude toward working at (this organization).

Overall Satisfaction:

Proposed additional questions to choose from:

1. This clinical site provided many opportunities to enhance my learning.

2. I would recommend this clinical site to other nursing students.

3. My clinical experiences are preparing me to succeed in nursing.

4. There was a supportive environment for this clinical experience.*

5. The clinical environment provided ways for me to learn from experienced nurses while improving my nursing skills.

Proposed: Additional demographic information:

What is your age? [write-in]

Please select the option(s) that best describe(s) your current gender identity:

Man

Nonbinary

Woman

Transgender

I prefer to not respond

I identify as: [write-in]

*Indicates survey items used with permission from Dr. Blegen and Dr. Spector from the

Preceptor Evaluation Tool (PET) survey instrument.

**Indicates survey items used with permission from Dr. Sand-Jecklin from the Student

Evaluation of Clinical Education Environment (SECEE) survey instrument.

APPENDIX D: EXPERT REVIEW MEETING TWO

Sanford Health Nursing Student Clinical Experiences Survey

Meeting two: Expert Panel Review

The purpose of this survey is: "to obtain feedback regarding student clinical experiences at Sanford to enhance the student experience, ultimately impacting workforce development."

Proposed instructions: Sanford Health is collecting feedback from students regarding their clinical experiences. Your participation is voluntary. Results from this survey will be used to enhance the nursing student clinical experiences and may be used to support future research efforts. Please rate your level of agreement or disagreement with the following items based on interactions with nursing staff from the department where you completed your clinical experiences.

> **Proposed Likert Scale:**

○ Strongly Agree (1) Agree (2) Undecided   (3) Disagree (4) Strongly Disagree (5)

Defining Themes:

A. Welcoming: (Sense of Belonging, Respect, Communication, Inclusion)

Current statement:

Welcomed *you* to your clinical experience (not satisfied---extremely satisfied)

Proposed additional questions to choose from:

1. Acknowledged my presence

2. Informed me of possible learning experiences.

3. Included me in the planning of patient care.

4. Supported me in applying new knowledge.

B. Supported: (provided encouragement, displayed interest in assisting with learning)

Current statements:

Interacted with you respectfully
Supported you in a professional manner

Proposed additional questions to choose from:

1. Encouraged me to ask questions.

2. Assisted me in achieving my learning goals.

3. Provided with useful feedback regarding my performance.

4. Supported me in applying new knowledge.

5. Provided opportunities for me to enhance my communication skills with patients.

6. Provided opportunities for me to practice skills (i.e., starting IV's, inserting foley

catheters, etc.).

C. <u>Valuable Resource</u>: (the useful /helpful qualities and attributes of a person)

   Current Statement:

    Answered your concern/questions

   Proposed additional questions to choose from:

   1. Was knowledgeable of hospital policies and procedures.

   2. Encouraged me to use evidence-based practice to make clinical decisions.**

   3. Helped me to determine appropriate patient priorities.*

   4. Guided me through situations that I was unfamiliar with.

   5. Taught me to ask questions (such as "what if…? Or "What could these symptoms

   mean?") as a way to develop my clinical reasoning skills.*

   6. Assisted me with using information technology for patient care.

D. <u>Inspired to be (Hospital Organization)</u>: (inspiration: a feeling, moved to action; promotes
   a sense of success)

Current Statement:

Inspired you to be a (Hospital Organization) nurse.

Proposed additional questions to choose from:

1. Demonstrated ways I could succeed in this organization.

2. Served as positive nursing role models.

3. Helped me feel better prepared to become a professional nurse.

E. **Overall Satisfaction**:

Proposed additional questions to choose from:

1. This clinical site provided many opportunities to enhance my learning.

2. I would recommend this clinical site to other nursing students.

3. The clinical environment provided ways for me to learn from experienced nurses while

improving my nursing skills.

4. I can see myself working as a nurse within this organization.

F. Additional demographic information suggestions:

What is your age? [write-in]

Please select the option(s) that best describe(s) your current gender identity:
- Man
- Nonbinary
- Woman
- Transgender
- I prefer to not respond
- I identify as: [write-in]

*Indicates survey items used with permission from Dr. Blegen and Dr. Spector from the Preceptor Evaluation Tool (PET) survey instrument.
**Indicates survey items used with permission from Dr. Sand-Jecklin from the Student Evaluation of Clinical Education Environment (SECEE) survey instrument.

Sanford Health Nursing Student Clinical Experiences Survey

Meeting three: Expert panel review

The purpose of this survey is: "to obtain feedback regarding student clinical experiences at Sanford to enhance the student experience, ultimately impacting workforce development."

Defining Themes:

C. **<u>Welcoming:</u>** (Sense of Belonging, Respect, Communication, Inclusion)

Current statement:

1.Welcomed *you* to your clinical experience

Adopted statements:

1. Acknowledged my presence.

2. Included me in the planning of patient care.

D. **<u>Supported:</u>** (provided encouragement, displayed interest in assisting with learning)

Current statements:

1. Interacted with you respectfully

2. Supported you in a professional manner

Adopted statements:

1. Encouraged me to ask questions.

2. Assisted me in achieving my learning goals.

3. Provided opportunities for me to practice skills (i.e., starting IV's, inserting foley catheters, etc.).

E. **<u>Valuable Resource</u>**: (the useful /helpful qualities and attributes of a person)

Current statement:

1. Answered your concern/questions

Adopted statements:

1. Helped me to determine appropriate patient priorities.*

2. Guided me through situations that I was unfamiliar with.

F. **Inspired:** (inspiration: a feeling, moved to action; promotes a sense of success)

   Current Statement:

   1. Inspired you to be a (hospital organization) nurse.

   Adopted Statements:

   1. Served as positive nursing role models.

   2. Demonstrated ways I could succeed in this organization.

   3. Helped me feel better prepared to become a professional nurse.

G. Additional demographic information:

1. What is your age? [write-in]

2. How many clinical experiences have you attended at Sanford Health? (One clinical experience is equivalent to four or more hours at one location). [write-in-range]

DISCUSSIONS SUPPORT KEEPING ALL ORIGINAL SURVEY ITEMS

*Indicates survey items used with permission from Dr. Blegen and Dr. Spector from the Preceptor Evaluation Tool (PET) survey instrument.
**Indicates survey items used with permission from Dr. Sand-Jecklin from the Student Evaluation of Clinical Education Environment (SECEE) survey instrument.

APPENDIX F: FINAL PILOT SURVEY

Thank you for participating in a clinical rotation as (Hospital Organization). We are so glad to be part of your nursing education! Please answer the following questions focused on your experience in the clinical department and with (Hospital Organization) nursing staff. If you attended clinical in more than one department, please choose one to evaluate. The feedback will be utilized to strengthen future clinical experiences at (Hospital Organization).

1. Name (Optional)

2. What is your age?

[   ]

* 3. In what type of program are you enrolled?

○ Bachelor's of Science in Nursing

○ Associates of Science in Nursing

○ Licensed Practical Nurse

○ Certified Medical Assistant

○ Other (please specify)

[   ]

* 4. Term

[▼]

Fall, spring summer

* 5. Term Year

[▼]

2022 2023 2024 2025

* 6. School

[   ]

* 7. Region

[▼]

8. Type of Clinical Experience

○ Group Clinical

○ Practicum/Preceptorship

* 9. How many clinical hours have you experienced at Sanford Health?

[dropdown ▼]

0-10 hours

11-40

41-120

120+

10. In what facility was your clinical experience?

○ Sanford Medical Center Fargo

○ Sanford Broadway Medical Center

○ Sanford South University

○ Sanford Clinics

○ Other (please specify)

[text field]

11. In what facility was your clinical experience?

○ Sanford USD Medical Center

○ Sanford Clinics

○ Other (please specify)

[text field]

* 12. What unit hosted your clinical experience? If you attended clinical on multiple units, please choose one to evaluate.
(write in)

Please rate your level of agreement or disagreement with the following items based on interactions with nursing staff from the department where you completed your clinical experiences.

1 (Strongly Disagree)	3 (Neither Agree or Disagree)	5 (Strongly Agree)

* **13. Acknowledged my presence**

* **14. Welcomed me to my clinical experience**

* **15. Included me in the plan of care**

* **16. Encouraged me to ask questions**

* **17. Assisted me in achieving my learning goals**

* **18. Provided opportunities for me to practice skills (i.e., starting iv's, inserting Foley catheters, etc.)**

* **19. Helped me to determine appropriate patient priorities**

* **20. Guided me through situations that I was unfamiliar with**

* **21. Demonstrated ways I could succeed in this organization**

* **22. Served as positive nursing role models**

* **23. Interacted with me respectfully**

* **24. Supported me in a professional manner**

* **25. Answered my questions and concerns**

* **26. Helped me feel better prepared to become a professional nurse**

* **27. Inspired me to become a __(Hospital Organization)_____ Nurse**

* **28. Overall, I was satisfied with my clinical experience.**

29. Please share any feedback you have regarding your clinical experience at _____.

[text area]

30. Have you already accepted a position as a nurse after graduation?

○ Yes, at Sanford.

○ Yes, at a non-Sanford facility.

○ No. I would like information about future employment at Sanford.

○ No

* 31. Thank you for your interest in employment with _____! Please provide your contact information: name, email address, and phone number so we can connect to learn more about your aspirations as an RN or LPN at Sanford.

Name [   ]

Email Address [   ]

Phone Number [   ]

APPENDIX G: PERMISSION TO USE PRECEPTOR EVALUATION TOOL

3/1/2023

Hello Charys

Do you already have the tool? I am attaching it for you. We asked the same questions (changing the verbiage a little) for the preceptors and the new graduates. I am attaching both tools. The first (word document) was completed by the new graduates and the second (pdf) was completed by the preceptors.

If you are interested in using them, you could ask Dawn Kappel, our Director of Marketing and Communications, to give you permission. I am copying her on this email.

Thank you!

Nancy

Nancy Spector, PhD, RN, FAAN, Director of Nursing Education

National Council of State Boards of Nursing

111 E. Wacker Dr., Suite 2900, Chicago, IL 60601

312-###-#### (Direct), nspector@ncsbn.org

APPENDIX H: PERMISSION TO USE STUDENT CLINICAL EVALUATION

Hello Charys,

You have permission to use the SECEE inventory. I am sending the most recent version (V 4) of the instrument, as the psychometrics are improved over the 3rd version. I will also send the subscale item content, as well as the in-press version of the manuscript outlining the new psychometrics, in case you need them. Best wishes with your dissertation.

Kari S-J

/ Kari Sand-Jecklin EdD, MSN, RN, AHN-BC

Associate Professor Emeritus

School of Nursing

West Virginia University

304.###.#### (cell)

ksandjecklin@hsc.wvu.edu