

PRECEPTOR EDUCATION PROGRAM IMPACT ON IMPLEMENTATION OF THE
PRECEPTOR ROLE

BY

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Abstract

The purpose of this mixed methods study was to identify potential benefits and gaps in an academic-based preceptor education program offered to long-term care facilities in New Jersey. Preceptors are experienced nurses who provide guidance, support and instruction to new nurses transitioning from student to professional. Through an online survey and individual interviews, preceptors who participated in the program reflected on to what extent and in what ways the program impacted their understanding of key concepts critical to the preceptor role, as well as their ability to effectively apply these concepts in the work setting. Informed by Rogers' Diffusion of Innovation framework, the data were also analyzed to determine if potential benefits and gaps in understanding and applying preceptor concepts in the work setting differed by innovator category.

All preceptors who attended the preceptor education program were invited to participate in the study. Of 55 participants, a total of 32 completed surveys. A stratified random sample was employed to obtain representation from each innovator category for the interviews. A total of 15 preceptors participated in the interview process.

Survey data analysis showed that respondents as a whole rated both their understanding and application as highest for the feedback and adult learning concepts. Analysis by individual innovator category indicated that the Early Adopter (EA) category had the highest means for understanding and application. The EAs rated feedback as the highest concept for understanding and application.

Interviews identified common program benefits of *discussion groups* and *use of program materials as scaffolds*. Challenge or gap themes included *amount of course materials* and *in-person class*, *role conflict* and *lack of continued support* from the program. Analysis by

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innovator category identified *introducing preceptor concepts to others* as being a theme specific to the Early Adopter and Innovator categories. While the challenge themes of *in-person class* and *lack of continued support* were common to all three innovator categories, *role conflict* was not present in the Innovator group.

Based on study findings, recommendations for the preceptor education program revisions include increasing active learning strategies, converting theory to an online component, and developing a PD refresher program.

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Chapter 1: Introduction

With a looming nursing shortage and challenges in retaining new nurses, the long-term care industry faces a potential crisis, which will impact the safety of its elderly patient population (Aaron, 2011). Successful new nurse transition to the professional work role requires support and resources nursing homes do not usually have. The transition from the theoretical world of the academic setting to the authentic clinical environment of a health care setting is a journey in which the new nurse encounters challenges, uncertainty, and anxiety (Kim, 2007). Nurses leaving their jobs within the first year of employment accounts for 25.7% of all RN turnover (NSI Nursing Solutions, 2014). High turnover is linked to poorer quality of care (Cimiotti, Aiken, Sloan, & Wu, 2012) as well as the additional expenditure of fiscal resources needed to recruit and train replacement staff. New nurses benefit from the guidance of an experienced colleague who is able to promote autonomy in practice and develop strategies for life-long learning. To accomplish this, many health care facilities have adopted the use of a preceptor in the practice setting. A preceptor is defined as a “nurse with demonstrated competence in a specific area who serves as a teacher/coach, leader/influencer, facilitator, evaluator, socialization agent, protector, and role model to develop and validate the competencies of another individual” (Ulrich, 2012, p. 1). The preceptor skill set includes activities and behaviors such as provision of constructive feedback, using higher level questioning, modeling behavior, and effectively addressing conflict. This role requires a different knowledge and skill set from those utilized by the nurse to provide safe and effective patient care. Education and training is needed to provide experienced nurses a chance to gain competence in the preceptor role.

Hospital settings have education departments capable of providing education and training to nursing employees selected to serve as preceptors to new nurses. The hospital setting has

traditionally been the environment where the majority of new nurses first seek employment. Most hospitals in New Jersey have developed their own preceptor training programs as they often hire many new nurses on an annual basis, justifying the need for a ready supply of trained preceptors. Previous studies have focused on the preceptor role in the hospital setting (Hallin & Danielson, 2009; Hyrkas & Shoemaker, 2007; Luhanga, Dickieson, & Mossey, 2010; Tsai et al., 2014), and the education programs developed to address the needs of preceptors, but they have not yet made that transition into the non-hospital setting.

Statement of the Problem

Until recently, non-hospital organizations did not hire new nurses on a consistent basis, as nursing schools directed graduates to the hospital setting as the ideal environment to begin their careers (Aaron, 2011; Spector et al., 2015). This infrequent hiring of new nurses did not support a need to design and implement preceptor training programs that could be sustained by each individual organization.

However, new health regulations and changes in health care financing have shifted medical and nursing care for an increasing number of chronically ill older adults from hospitals to nursing homes. This shift out of the hospital has resulted in greater numbers of new nurses seeking employment in nursing homes (Aaron, 2011). These facilities often lack the educational resources to prepare their experienced nurses to serve as preceptors (Silvestre, Bowers, & Gaard, 2015). As a result, nursing homes are at risk for the issue of turnover and attrition of new nurses as they transition from the student to professional role with little or no support and guidance. Current statistics show new nurse turnover in nursing home settings to be as high as 50% in the first year of practice (Aaron, 2011; Silvestre et al., 2015).

A landmark study conducted by the Institute of Medicine (IOM) entitled, *The Future of Nursing: Leading Change, Advancing Health* (2010) recommended eight actions necessary for the success of the nursing profession. One of these recommendations called for the establishment of a new nurse residency and preceptor program to support and guide new nurses in all health care settings. To implement the eight recommendations, action coalitions were established in each state. These coalitions developed and coordinated all activities undertaken to meet the IOM recommendations to be addressed by their particular state. In order to address the need for new nurse residency and preceptor education programs, a unique collaboration between the New Jersey Action Coalition (NJAC), Health Care Association of New Jersey (HCANJ), the New Jersey Hospital Association (NJHA), and Rutgers University School of Nursing was formed. These collaborative efforts resulted in the design of a state-wide preceptor training and education program that was offered to all long-term care facilities in New Jersey, henceforth referred to as the NJAC preceptor education program. The NJAC preceptor education program was based on a research driven, evidence-based curriculum. It contained topics that reflected the role of the preceptor including adult learning principles, feedback and communication, time management principles, strategies for facilitating new nurse transition to the professional role, and teaching strategies to stimulate critical thinking (Billay & Yonge, 2004; Boyer, 2008; Chang, Lin, Chen, Kang, & Chang, 2015; Foy, Carlson, & White, 2013; Ulrich, 2012). The five-day program was designed to take place in a classroom setting with opportunities to apply the content to work situations via case studies, discussions, and scenarios encountered by preceptors with new nurses in the nursing home setting. As faculty for this project, I worked to design and implement content, learning objectives, and teaching strategies for key sessions, as well as assist

in data collection and analysis of some qualitative questions evaluating the nurse resident portion of the program.

Based on initial demographic data supplied by the participating facilities, nurses were selected by the facility leadership to participate, rather than through volunteering. Participating preceptors were a diverse group based on characteristics which included level of seniority in the facility, level of education, position within the facility, and demonstrated expertise in their current position. Participants ranged from Directors of Nursing to staff nurses; nurses with associate degrees, bachelor's degrees, and master's degrees; and work experiences ranging from two years to over 20 years. This range in demographics is consistent with the workforce in the long-term care industry. Summative evaluations completed by preceptor participants indicated the NJAC preceptor education program was effective in educating preceptors about their role. However, post program site visits to participating nursing homes by program faculty yielded differences in the degree of preceptor role implementation among the facilities. The program was ultimately not effective at facilitating uniform, high-quality implementation of the preceptor role across all participating nursing homes.

Although the preceptors expressed overall satisfaction with the NJAC preceptor education program and felt all topics/content were directly related to and beneficial for implementing the preceptor role, there was a lack of specific examples that indicated how the program impacted their understanding and application of key concepts. Follow-up conversations with preceptors and nurse residents indicated that in some cases the preceptor implemented the role well, addressing the new nurse's need for feedback, higher level questioning to stimulate critical thinking, and support during times when the new nurse was discouraged or uncertain. Some felt that while they were able to spend time at various points

during the week mentoring the new nurse, the preceptors were not able to be present to provide support at the specific time the new nurse needed it. In other situations, there was little interaction between the preceptor and new nurse in the nursing home setting. The inconsistent implementation of the preceptor role suggests that further information is needed to determine the impact of the program (teaching strategies, program materials, program presentation) on participants' understanding of preceptor concepts, and their ability to apply this knowledge and understanding in the work setting. Thus, the problem of practice addressed in this study is the gap in the existing NJAC preceptor education design to meet the needs of a diverse group of participating preceptors to fully implement the preceptor role in their work setting.

Theoretical Framework

A key challenge to offering the NJAC preceptor education program to preceptors from multiple agencies is the diversity of the group. The success of implementing the concepts learned in the preceptor education program in the nursing home setting is dependent upon the preceptor education itself and the characteristics of the preceptors participating in the program. The diverse characteristics of preceptor program participants (including level of formal education, job position, degree of power and influence in their respective nursing home setting, and longevity in current job position) may each impact the degree to which each preceptor will implement the preceptor role in the work setting (Chen, Hsu, & Hsieh, 2012; Sandau, Cheng, Pan, Gaillard, & Hammer, 2010). For example, participants reported nursing education ranging from an associate degree in nursing to a master's degree in nursing. Participants with higher level degrees may have more coursework devoted to the knowledge of leadership principles that they can draw on when trying to implement preceptor ideas. Also, their positions in their respective nursing homes ranged from staff nurse to educator to director of nursing, with longevity in the

organization ranging from less than a year to twenty years. These characteristics may explain why some individual preceptors may have been in a better position within their facility to fully implement the ideas from the preceptor training program.

Rogers' (2003) diffusion of innovation framework classifies individual members of a system into innovator categories based on their openness to adopt/implement an idea or concept. Individuals can be grouped into these categories based on their level of comfort with taking risks, status within a system as an opinion leader, and level of education (Rogers, 2003). The innovator categories create groups with common characteristics and learning needs. If examined through the lens of Roger's diffusion of innovation framework, these characteristics may identify each participant's likeliness to implement the role (Rogers, 2003). Specifically, Rogers examined these characteristics in relation to the individual's risk-taking tolerance and motivation to implement an innovation. He defined five categories of adopters. These categories are grouped according to a normal distribution (as denoted by the percentages for each category). Each category demonstrated varying degrees of motivation to implement an innovation based on risk-tolerance:

1. *Innovators* are individuals associated with having control of resources, high social standing in the organization, more influential, high tolerance for risk, able to understand and apply complex information, and launch new ideas; comprises 2.5% of individuals in a given system or organization;
2. *Early adopters* are individuals associated with having a high degree of opinion leadership by peers, serving as role model for others in the system, and respected by peers who will follow their implementation of an innovation; comprises 13.5% of individuals in each system or organization;

3. *Early majority adopters* are individuals associated with being pragmatic; having average social status; status more at risk if innovation fails, and will deliberate longer than early adopters before implementing; comprises 34% of the individuals in a given system or organization;
4. *Late majority adopters* are individuals associated with being skeptical about implementing a new innovation, and are cautious, have little tolerance for risk, and may ultimately implement due to peer pressure; comprises 34% of the individuals in a given system or organization;
5. *Laggards* are individuals associated with being the last to implement or adopt an innovation, and have traditional thinking with great reluctance to change the status quo unless “forced” to do so; comprises 16% of the individuals in a given system or organization.

Based on this framework, preceptors who have a higher level of education, a job position that is accompanied by increased levels of power within their organization, and increased longevity in that position may more readily apply preceptor concepts from the educational program to the work setting. Due to their power/status, they can influence others and take risks with less repercussion. Those with lower levels of education and a position that is less powerful (in this case, a staff nurse) are likely to be more risk-averse, and so perhaps reluctant to take the risk of applying concepts from the educational program in a work setting where they are seen as less of an influential leader than the director. For this reason, one possibility may be that additional resources, support and assistance from the NJAC preceptor education program is needed to provide the more risk-averse preceptor with the opportunity to trial the role and observe outcomes before applying the role in the work setting. For example, while examining

faculty adoption of learner-centered teaching strategies in the classroom, Blumberg (2016) found that the late adopters and laggards were in need of more scaffolds, coaching, and modeling in order to apply those strategies in their classrooms. These additional aspects of the program may be manifested in additional hands-on activities and simulations, or data that demonstrates the role's success in actual work settings. The general point is that there may be gaps in the preceptor education design that are specific to one group of innovator category versus another. In this case, changes to the NJAC preceptor education program could be determined by aligning modifications to the program design with the gaps identified that may be specific to each preceptor innovator category.

Purpose of the Study

The purpose of this mixed methods study was to identify potential gaps in the NJAC preceptor education program that impact the participants' application of learned concepts in the work setting, and to investigate whether these gaps are differentiated by participants' identified innovator category. After determining the preceptors' innovation adoption category (innovator, early adopter, early majority adopter, late majority, or laggard), each category will be examined to see if certain gaps are more specific to one innovator category than another. A proposed design of a differentiated NJAC preceptor education program will be the deliverable for facilities based on preceptors' identified gaps in the preceptor education design. Participants gain knowledge and understanding of concepts to effectively apply the use of these concepts in the work setting. Lee, Lin, Tseng, Tsai, and Lee-Hsieh (2017) discovered that without input from the learner, preceptor education programs do not meet the learning needs of the preceptors. While pre/post testing of concepts often measures the knowledge gained, it does not typically address application. Data collected from preceptors who have participated in the NJAC preceptor

education program will be analyzed to understand the level of knowledge gained from the program and effectiveness of applying this knowledge of the role by each preceptor. It is hypothesized that the level of knowledge gained and effectiveness of application will differ by innovator category. If gaps are discovered, they will inform a proposal to revise the education program. This preceptor program is expanding to other non-hospital settings (including home care, community clinics, insurance companies, and rehabilitation centers) interested in recruiting and hiring new graduates from the Rutgers School of Nursing. The data gathered from this study will be used improve the preceptor education program so that it better facilitates the learning and implementation needs of a broad diversity of preceptors and care settings.

Research Questions

In an effort to better understand the impact of the preceptor training in implementing the role in long-term care settings, the following research questions will be addressed:

1. *What gaps in understanding of preceptor concepts do nurses in the NJAC preceptor education program identify when reflecting on their participation in the program?*
2. *What gaps in effective application of preceptor concepts do nurses in the NJAC preceptor education program identify when reflecting on their participation in the program?*
3. *In what ways (if any) do the identified gaps in understanding of preceptor concepts differ among innovator categories?*
4. *In what ways (if any) do the identified gaps in effective application of preceptor concepts differ among innovator categories?*

Chapter 2: Literature Review

The preceptor role is an accepted method of facilitating the transition of the new nurse from student to professional. The literature review will examine this role, the education and training needed for new preceptors to successfully take on the role, the preceptor's impact on the new nurse, preceptor perceptions regarding their training, and the importance of applying the role in the work setting. First, the literature review will address the critical role of preceptor training and education. The preceptor role requires a different knowledge base and skill set than that of a nurse delivering care to patients. Preparation in the form of education regarding this knowledge and skill set is necessary for the nurse to be a confident and competent preceptor. Next, the impact of the preceptor's preparation and competence on the transition of the new nurse from student to professional will be addressed. A preceptor who does not feel adequately prepared and cannot carry out the role effectively has a negative impact on the new nurse due to the preceptor's inability to guide, support, or give constructive feedback during the transition process.

Following the impact of the preceptor role on the new nurse, the literature will address preceptor education and key components. Studies that address concepts essential to the role will provide information regarding the concepts addressed in the NJAC preceptor education program. The importance of designing and carrying out training and education based on the learning needs of the preceptor to develop the preceptor to be confident and competent in their role are included.

The next group of studies examined gaps in the training from the perspective of the preceptor. Historically this body of research has focused on preceptor education programs designed for a single facility, usually a hospital setting. As employment opportunities for new nurses shift to long-term care facilities that lack the resources to create their own preceptor

education program, multiagency programs are being studied for their design and implementation. Program design is evaluated following program participation. Many studies measure this through satisfaction surveys. Preceptors determine whether topics were satisfactory, or whether they preferred one topic to another. Other studies also determine effectiveness of application of program concepts through preceptor and new nurse/preceptee impressions of the role and its benefits. The concepts of knowledge/understanding and implementation/application of preceptor concepts in the work setting is included in this section.

The preceptor who participates in education and training programs is charged with implementing the concepts of the preceptor role in the work setting. Individual demographics and characteristics are explored to determine which characteristics serve as predictors of success in the preceptor role. Rogers' Diffusion of Innovation framework groups several individual characteristics (education, influence in the work setting, and willingness to take risks) into innovator categories as a means of identifying which individuals are likely to be more willing to implement a concept. Finally, the preceptor role is examined through the lens of the diffusion of innovation framework with studies cited from education and nursing.

The Critical Role of Need-Based Preceptor Training

The experienced nurse is considered to be clinically proficient. They provide a ready resource and role model for nursing students as they strive to gain a foothold in the profession. However, clinical proficiency does not always hold the promise of a competent teacher or learning facilitator (Altmann, 2006; Newton, Billett, Jolly, & Ockerby, 2009; Rogan, 2009; Varley, MacNamara, & Mannix-McNamara, 2012). The new preceptor must possess the necessary knowledge, skills and strategies to design a learning environment for the student nurse in the clinical setting. Their ability to deliver expert care and make life and death decisions is

based on years of processing and internalizing knowledge gained in multiple practice situations. Despite this expertise, the clinical expert finds himself or herself in a more novice role as a new preceptor (Benner, 1982). The transition from proficient staff nurse to novice preceptor can be a stressful period for the new preceptor. A new skill set is required for preceptors to cultivate the use of cognitive skills as well as psychomotor skills in the new nurses to allow them to make the transition from the novice role. To carry out this dual task of identifying and developing their own learning skills as well as those of their new nurse requires support and preparation (Luhanga et al., 2010). This support takes place in the form of educational preparation and organizational support.

Previous studies on the education and application/implementation of the preceptor role focused on programs designed for a single entity (single hospital) by educators within that setting. The criteria for preceptors (level of education, years of experience, job title) could be upheld within the setting through its policies and hiring practices. More recently, the literature on preceptor education is beginning to address the development of programs offered outside of a single setting. Third party multiagency programs (Spector et al., 2015) are offered to facilities that lack the resources to design and implement their own preceptor education program. These multiagency programs are comprised of preceptors with diverse levels of education, job titles, and years of experience. The needs of all participants may need to be identified and addressed in order to design the possible revisions to create a more effective program and more uniform implementation.

Preceptor education. The literature contains many studies addressing the content, duration, learning methods, and evaluation of preceptor training and education programs (Carlson & Bengtsson, 2015; Chang et al., 2015; Foy et al., 2013; Lee-Hsieh et al., 2016;

Luhanga et al., 2010; Sandau et al., 2011). Some studies on the design of preceptor programs have been conducted, and they generally find that (a) preceptor training is critical (Carlson & Bengtsson, 2015; Chang et al., 2015; Lee-Hsieh et al., 2016; Sandau et al., 2011), but that (b) the training is often not tailored enough for preceptors' specific needs (Chang et al., 2015; Luhanga et al., 2010; Tsai et al., 2014). Sandau et al. (2011) tested preceptors' self-reported confidence and comfort pre and post participation in a preceptor education program. The group demonstrated significantly higher confidence and competence three to six months post program in the areas of coaching critical thinking, working with new nurses with diverse learning styles and/or cultural backgrounds, and providing positive and constructive feedback.

Luhanga et al. (2010) conducted focus groups to determine the type of support and development needed by the preceptors in their study. The focus group data identified a need for accessible resources (in this case a preceptor guide book) that was less cumbersome than the one provided. In addition, preceptors identified a lack of continued communication and support with preceptor training faculty as a challenge to implementing the preceptor role. The majority of programs contain several topics addressed in the literature as exemplifying defined preceptor behaviors and knowledge. These include communication, teaching strategies, critical thinking, feedback and evaluation, and conflict resolution (Foy et al., 2013; Luhanga et al., 2010).

Impact of deficient training on new nurse. Lack of training also erodes the relationship between preceptor and student or new nurse and impacts the learning experience (Newton et al., 2009). The preceptor who is unable to identify the learning needs of the new nurse fails to provide opportunities for the new nurse to apply theoretical concepts learned in the classroom to clinical practice (Newton et al., 2009). Because of the preceptor's inability to identify a learning need, new nurses lose confidence in the preceptor's knowledge and

competence to provide a fruitful learning experience (Giallonardo, Wong, & Wasiw, 2010; Kim, 2007; Zinmeister & Schafer, 2009). The combination of a new nurse's lack of confidence in their preceptor's knowledge and skills and the inability of the preceptor to assess the needs of the learner create a failure in the collaborative learning partnership. Similar results were obtained from a survey of nursing school faculty ($n=53$) regarding their perceptions of preceptors in nursing homes. Respondents identified that preceptors in the nursing home facilities did not connect the need for students to gain the cognitive knowledge and rationale for the skills they practiced. Rather, the emphasis was focused on the achievement of "hands-on" psychomotor skills as sufficient in developing a competent practitioner (Aaron, 2011; Chen, Brown, Groves, & Spezia, 2007).

Gaps in preceptor education. Preceptors who strive to provide a quality learning experience also identify this gap in preceptor preparation and lack of training. Rogan (2009) surveyed nurse preceptors to determine the type of preparation they felt was necessary to perform their role. She found 71 out of 75 respondents felt a description of preceptor roles and responsibilities and expectations from students and faculty was essential. In addition, 66 respondents felt content for the teaching role (including teaching critical thinking) and evaluating student performance constructively were essential (Rogan, 2009).

Workshops designed to educate preceptors are often time-limited due to the preceptor's work responsibilities. Ranging from two hours (Chang et al., 2015) to two days (Henderson & Eaton, 2006), most programs are conducted by hospitals for their preceptor employees and consist of topics addressing the role and responsibilities of the preceptor, adult learning concepts, effective teaching strategies, and communication (Chang et al, 2015; Henderson & Eaton 2006; Hu et al, 2015; Tsai et al, 2014). In an attempt to assess education offered by academic

institutions, Altmann (2006) sampled nursing school deans ($n=226$) and found that while 100 provided orientation for preceptors, this orientation lasted 2.5 hours on average, with content focused on completing student evaluation forms. The remaining 126 schools provided no orientation or education for preceptors. This brief orientation, coupled with the fact that most preceptors were working in collaborative learning partnerships with new nurses for the first time suggests a gap in the expectations for the preceptor role and the actual ways in which the role is manifested. Despite the limited time dedicated to preceptor education, participants have found the education and training useful in contributing to their confidence and competence in the preceptor role (Henderson & Eaton, 2006; Sandau et al., 2011; Tsai et al., 2014). Measuring preceptors' self-reported confidence and comfort in their role following participation in an interactive training workshop, Sandau et al. (2011) discovered that participants reported satisfaction with the education program. In addition, participants expressed increased levels of comfort in working with new nurses with different learning styles and coaching the new nurse in critical thinking. Participants also expressed increased confidence in providing feedback to a new nurse (Sandau et al., 2011).

Education and understanding versus application. Despite the previous studies reporting preceptor satisfaction of training effectiveness, I found no studies reporting measured increases in preceptor knowledge and actions or new nurse outcomes as a result of training conducted for preceptors. Although well intentioned, the education programs did not always bridge the theory-practice gap for preceptors, as preceptors participating in the training reported that the content was too theoretical and not applicable to the work setting (Chang et al., 2015). However, the mixed methods study by Chang et al. (2015) sought to identify not only the extent

the preceptor participants identified each course topic as meeting their learning needs, but also the ability to apply each topic in the work setting.

Little exists in the literature detailing the specific gaps in content, design, or timing of preceptor education and its impact on preceptor behaviors. In addition, preceptors in hospital settings attend a program that is tailored to their institution by educators in the institution. Pittman, Horton, Terry, and Bass (2014) noted that while over 50% of hospitals offer their own programs for nurses, only 2% of home health agencies responding to their survey offered an educational program. While preceptor concepts remain the same (providing feedback, supporting the new graduate through transition), tools, case studies, and discussions in the hospital-sponsored program reflect hospital procedures and protocols. Due to the scarcity of studies measuring changes in preceptor teaching strategies, new nurse outcomes, and education offerings in the nursing home setting, there is a need for mixed-methods studies focused on preceptor education and the impact of this education on both knowledge/understanding of concepts, as well as their impact on application in the work setting. This will add to the literature regarding preceptor education content tailored to the individual learner. This information could then be used to revise preceptor training program designs to address the learning needs of participants from multiple settings, and to promote more uniform implementation of the preceptor role.

The Role of Individuals in Adopting an Innovation

Diffusion of innovation is a theory that seeks to explain how, why, and at what rate new ideas, programs, or innovations spread, are implemented, and maintained. This problem of practice is examined through the lens of the diffusion of innovation framework (Rogers, 2003). Specifically, within the diffusion of innovation framework, the preceptor can be seen as the

individual adopter/implementer of an innovation, and so that leads to an examination of whether the innovator category may explain perceived gaps in education.

Stages of adoption. According to the Diffusion of Innovation theory, there are five stages in the adoption decision-making process: knowledge, persuasion, decision, implementation, and confirmation or sustainability (Figure 1). This study focuses on the implementation stage to discover the differences in preceptor role implementation across the participating long-term care facilities. Rogers defines implementation as the carrying out of the innovation (Rogers, 2003). In this case, it is the preceptor applying behaviors of the preceptor role in the nursing home setting. Differences in implementation and application of preceptor concepts in the work setting among the participants might be explained by differences in their individual innovator category.

Figure 1. Stages of adoption of an innovation

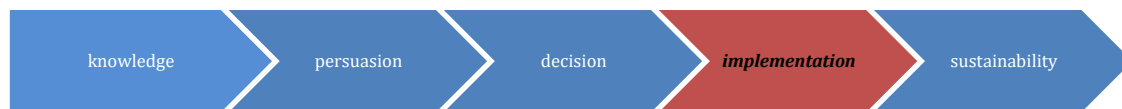
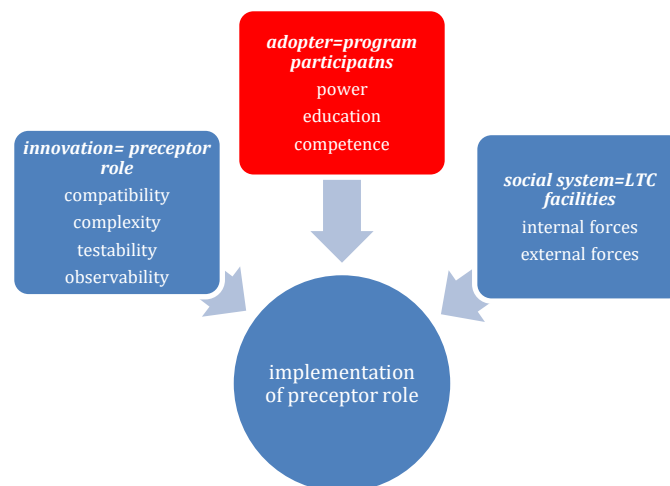


Figure 2. Key elements influencing implementation of an innovation



Innovator categories. Rogers defined five categories of adopters: innovators, early adopters, early majority adopters, late majority adopters, and laggards. The incidence of each category falls along a normal distribution curve. The innovators tend to be the first to implement an innovation without hesitation. Innovators have a high tolerance for risk and perceive themselves to have a high enough social status in the organization that failure will not create a negative impact on their status. The early adopters soon follow the innovators and serve as opinion leaders, convincing others to adopt and implement. They are also perceived to have a high social status in the organization but are slightly more cautious than the innovator requiring more certainty that the innovation will be a success before they decide to implement. The early majority adopters follow in a longer amount of time than the early adopter. They have more of a pragmatic approach and follow the two earlier categories due to their perceived average social status, with more risk incurred if implementing an innovation that may fail. The early majority adopters are slightly more risk averse. Late majority adopters tend to implement an innovation when the majority of the individuals have already implemented it. They are more skeptical about new programs and initiatives and perceive themselves to have below average social status with little tolerance for failure. Finally, the laggards have an aversion to change and prefer to maintain the status quo, even if a need is identified for change. This group often sees the innovation as “forced” on the environment. Categories of adopters is one possible way to describe the diversity of personal characteristics preceptors bring to a preceptor training program, and so may lead to identifying if gaps in learning needs and application of concepts in the clinical work setting are more specific one group versus another.

Influence of Individual Adopter Characteristics on Preceptor Implementation

The preceptor is charged as individual adopter to implement the preceptor role based on application of behaviors and knowledge gathered from the NJAC preceptor education program. Several studies examining preceptor education programs collect participant demographic data (nursing education level, power within the organization due to job title, years of experience) to describe the sample of participants (Lillibridge, 2007; Smedley, Morey, & Race, 2010). However, Smedley, Morey, and Race (2010) also conducted ANOVA testing with demographic variables of their sample and found that no significant difference existed in preceptor education outcomes (changes in knowledge, skills, attitudes) based on age, nursing education level, or years of nursing experience.

Other preceptor education program studies examined demographic characteristics and their impact on program outcomes. Demographic data (including total years as preceptor, preceptor age, employment site, and level of education) collected from preceptors ($n=47$) participating in an online preceptor program conducted for public health/community nurse preceptors indicated that only level of education was significantly correlated to participants' self-efficacy scores (Parsons, 2007). Rogan (2009) identified that preceptors' years of work experience determined what aspects of the preceptor education were most important, with those preceptors having less work experience (1-10 years) indicating that learning to teach new nurses to set priorities and organize workload as the most important education components; and more seasoned nurses in the preceptor program (11 or more years work experience) identified course content which included preceptor roles and teaching strategies as the most important education components (Rogan, 2009).

The diffusion of innovation framework groups individuals into innovator categories to explain the likelihood that an individual will implement an innovation, and addresses the unique needs of each group based on their willingness to implement an innovation (Rogers, 2003). When preceptors come from a diverse group of multiple health care settings and organizations, this categorization may assist in the development of scaffolds and resources specific to each category to promote a more uniform implementation of the preceptor role.

Role of the innovator. Due to a lack of preceptor studies using the diffusion of innovation framework, studies in this section address the implementation of programs in education and health care settings following education provided to persons expected to implement the program or innovation in the work setting. For the purpose of this study, the characteristics of the individual adopter are being considered to address gaps in the educational design to create a more uniform implementation for all participants.

Turner, Nicholson, and Sanders (2011) examined the impact of innovation characteristics, individual innovator characteristics, and environmental factors on health care professionals' implementation of a parenting intervention program following training on the program. Surveys administered six months after completion of a 2-day education program examined the health care participants as individual innovator (indicated by their degree of self-efficacy), perceived quality of training program/innovation (active participation, course content, overall satisfaction), and environmental factors (perceived supports and barriers in the workplace). Results were correlated to the implementation—in this case, implementation was defined as the health care professionals conducting the full 3-4 sessions with parents. The health care professionals' overall satisfaction with the training was high; their perceived self-efficacy was significantly higher post training than pre training; however, a six-month follow-up

indicated a significant decrease in self-efficacy from immediately post training to six-month follow-up. Self-efficacy had a moderate positive association with implementation immediately after training and six months later. Full program implementation was carried out with 25% of the families, while the other 75% experienced only partial implementation. It is not clear if these implementation rates were differentiated by health care participant characteristics (education, job role, power/status in the organization). The authors, using correlations and a SEM analysis, attributed self-efficacy not only to the individual characteristics of the participants (such as self-efficacy pre-training), but also program supports (education and training and tools) and environmental barriers. The environmental barriers included limited open hours to conduct full implementation, poor fit of innovation with current workplace needs, and resistance to replacing previous practices with this new parent intervention. In this case, the self-efficacy of the individual innovator was influenced in part by personal characteristics, the education program and resources, and the work environment with its new or unfamiliar situations.

With a focus on the individual adopter/implementer, a study was conducted to evaluate the effectiveness of a program designed to provide the knowledge and skills needed by collegiate faculty to engage in community-based scholarship (Jordan et al., 2012). The program selected participants deemed to be innovators based on criteria including experience in community-engaged research and teaching and reputation/influence within their respective department. These innovator participants ($n=5$) were charged with creating a program to guide the implementation of a community-engaged scholarship program for a second set of participants labeled early adopters. The early adopters were recruited to apply for inclusion in the community-engaged scholarship program. Out of 25 initial applicants, five were selected. This group was considered early adopters based on their lesser degree of experience in community-

engaged teaching or research than the innovators; an alignment between the participants' expressed learning objectives and the goals of the program; and the potential for the applicant to become an involved representative for community-engaged scholarship for their faculty colleagues (Jordan et al., 2012). Evaluation via competency surveys and interviews following the educational program indicated that although early adopters gained further knowledge regarding community-engaged scholarship, they did not feel ready to be community-engaged scholarship mentors to the general university community. Although the study uses Roger's Diffusion of Innovation framework to select innovator and early adopter participants, there is not a clear delineation of criteria defining each category. One university employed all participants. The diversity of the long-term care (LTC) preceptor participants (in terms of level of nursing education, job title, and experience in the job) cannot be assumed to be early adopters. Therefore, the innovator category of each participant must be identified with a more specific tool.

A study to examine gaps in the implementation of a research-based practice protocol in the critical care setting of hospitals looked at individual characteristics as determinants of successful implementation of these practices (Bourgault et al., 2014). A survey of 370 critical care nurses across the US sought to examine factors that influenced implementation of a practice alert that provided guidelines on four recommended methods to verify feeding tube placement in a patient. The survey found that only 29% of the participants implemented all four recommended practices. An analysis of data revealed that personal characteristics of the individual adopter (in this case, a higher level of formal education, nursing role as direct care provider in the organization), along with characteristics of the innovation/practice guideline and environmental characteristics of the work setting positively influenced adoption and

implementation of at least some of the four recommended practices. The study provided a better insight into the variables (innovation, individual adopter characteristics, and environment characteristics) that influenced this implementation. In particular, individual adopter characteristics reflected some of the characteristics Roger's framework noted in innovators and early adopters. Specifically, nurses who possessed higher levels of nursing education (a bachelor's degree or higher) more consistently implemented feeding tube practice guidelines. In addition, nurses employed in the direct care of patients requiring feeding tubes were more inclined to employ all interventions. These nurses included staff nurses and their direct unit nurse supervisors. The staff nurse or direct supervisor role is involved in the direct care of patients. Experience in delivering this care provides the nurse with the expertise to be viewed by colleagues as an influencer or opinion leader in feeding tube maintenance. This correlates to factors used by Rogers in identifying innovator categories—namely education and social standing as an opinion leader (Rogers, 2003).

While the previous survey examined individual characteristics of nurses implementing a feeding tube guideline, Porter and Graham (2016) looked more specifically at the implementation of online learning concepts based on faculty participants who self-identified themselves as one of the categories of innovator as described in the Diffusion of Innovation theory. Using an online survey completed by 214 faculty members at Brigham Young University, Porter and Graham (2016) sought to determine the degree to which environmental characteristics (organizational strategy, infrastructure, technological and pedagogical support) impacted the implementation of blended learning techniques in the classroom in the overall population. Porter and Graham used a two-part survey to measure the perceived innovator category of each participating faculty member from the perspective of the faculty member (by

having them select a research-based description of each category they felt best described them), as well as a second part of the survey which employed a checklist for faculty to note the frequency of online learning activities. These two sections were compared to determine if a particular aspect of the education/training facilitated or impeded the implementation of blended learning for each innovator category. Their results from the first part of the survey indicated that 59% of study participants categorized themselves as more innovative than what was shown in their online learning activity checklist scores. Due to the discrepancy between faculty's perceived innovator category and the actual score of activities utilized by the faculty, the latter was used to determine innovator category. Based on a formula that calculated the frequency, consistency, and amount of activities utilized by faculty participants, an innovator category was generated for each faculty participant. A third part of the survey queried participants as to which items (infrastructure and support, online learning activities, face-to-face learning, data demonstrating effectiveness of online learning from other studies) would influence them to implement online learning activities. These items were examined through the lens of the various innovator categories to determine if certain items were more prominent for some innovator categories versus others. Participants who scored as innovators and early adopters indicated they would be more influenced to implement online learning activities if provided with the infrastructure and support to create their own online learning. They also indicated a preference for online professional development. Early majority adopters preferred to be provided with evaluation data collected from earlier courses to implement blended learning. Early majority adopters also cited alignment of purpose/communication as a beneficial factor. Late majority and laggards felt infrastructure, technical support and one-on-one training to be most influential to their implementation of online learning activities. These findings indicate that different

categories of adopters may have different needs in the learning and implementation process. The authors suggest that while all components were present in the educational design, revision of the original design would be considered to provide each category of innovator with the elements they considered key to implementation. Findings from this study suggest the value in using an objective tool to measure innovator category of each preceptor.

While previously cited studies demonstrate a progression in studying the individual innovator categories, a study by Clement-O'Brien, Polit, and Fitzpatrick (2011) expanded the study of individual adopters in their study of the innovativeness of 106 hospital chief nursing officers (CNO). Results from a written survey using the Scale for the Measurement of Innovativeness (Hurt, Joseph, & Cook, 1977) indicated that graduate level education; years of experience in the CNO role, and leadership course completion were identified as significantly influencing the innovativeness of CNOs. The use of the Scale for the Measurement of Innovativeness with nurses in a health care setting may provide a more systematic and reliable way to measure the degree of innovativeness of the participants in preceptor education programs.

This literature review addressed the crucial role the preceptor plays in supporting the new nurse in his or her transition from student to professional. The role requires a skill set that is different from the nursing role and requires education and training in key concepts applied in supporting the new nurse (adult learning, critical thinking, support through transition, and feedback). While many programs contained these concepts, preceptors often found the education programs to be lacking in providing them with the resources and support to apply the concepts in the work setting.

Another aspect of this literature review focused on the search to identify key personal characteristics (education level, years of experience, job position) that predict learning needs and

competence of preceptors. Employing the diffusion of innovation lens to study nurses, some studies identified that innovator category is an additional personal characteristic and that different categories of adopters may have different learning needs. These studies helped to inform the research questions and methodology for this study in an attempt to determine the potential benefits, gaps, and effectiveness of the NJAC preceptor education program in providing preceptors with the necessary knowledge and skills to apply key concepts in the work setting.

Chapter 3: Methodology

The purpose of this mixed methods study was to identify potential gaps and benefits from the NJAC preceptor education program that impacted participant understanding and application of the preceptor role. Informed by Rogers Diffusion of Innovation theory this study also sought to see if potential gaps and benefits differed by individual innovator categories. The NJAC preceptor education program provided preceptor education to a diverse group of learners from multiple health care agencies throughout the state of New Jersey. As a result, it was challenging to address the diverse learning needs of individual participants as well as their differences in ability to apply preceptor concepts in the work setting. This study used a one-group mixed-methods research design to examine the learning experiences of nurses who participated in the NJAC preceptor education program. The data for the study was collected in two phases: a quantitative online survey distributed to all participants in the NJAC preceptor education program, and purposive qualitative interviews for a subset of the same group of preceptors. In this case, two forms of data—a quantitative survey and a qualitative 1:1 interview—were integrated to provide a more complete understanding of the experiences of preceptors than one method alone (Creswell, 2014). Data from this mixed methods study yielded information on learning needs of preceptors in long-term care settings that could be effectively addressed in future design based research studies of a revised NJAC preceptor education program.

In the quantitative first phase of the study, an online survey was conducted with past participants in the NJAC preceptor education program. The survey included demographic data (level of education, job title, years of experience in current job); innovator category/willingness to innovate (Scale for the Measurement of Innovativeness by Hurt, Joseph, & Cook, 1977); and preceptor perceptions of their understanding of targeted program concepts (adult learning,

critical thinking, transition to practice, and feedback) and their ability to apply those preceptor concepts in the clinical setting (Training Course Perception Scale (TCPS); Chang et al., 2015). Data from the surveys identified the level of innovator and preceptor perception of the NJAC preceptor education program impact on their understanding and application of the four key concepts.

In the qualitative second phase of the study, 1:1 interviews were conducted with a smaller subset of the past NJAC preceptor education program participants to obtain a richer description of gaps in the education program design and its applicability to the clinical setting. Interviews were used to gain more in-depth information from the individual respondents' survey results. Results from surveys guided the questions for the one-to-one interviews, particularly items which the respondents rated as low in the knowledge obtained from the education program or in the effectiveness of application, as well as items where there was discrepancy between the score for knowledge obtained and effectiveness of application. Discrepancies between knowledge/understanding of concepts and application of these concepts were explored further to see if participants considered the discrepancy was due to an aspect of the program that did not provide them with the tools and resources to apply that concept effectively. The interview results were grouped by category of adopter to identify whether there were gaps in education that were common or more prevalent to a particular innovator category. While the survey rated respondents' degree of preparation to implement specific behaviors of the preceptor role, the interview was focused on richer information to guide improvements/redesign of the NJAC preceptor education program (whether deficits existed in content, learning strategies, or program environment). Thus, quantitative efforts in the study of preceptor experience were complemented by qualitative analyses aimed at exploring how they perceived their preparation

for the role, challenges they faced in implementing the role, and learning needs identified to improve their implementation of the role. A timeline plan for this study can be found in Appendix A.

NJAC Preceptor Education Program Design

The NJAC preceptor education program consisted of a series of five one-day sessions delivered one day per week over five consecutive weeks for four cohorts of preceptors. The first cohort completed their program November 2015; the second cohort completed their program April 2016; the third cohort completed their program December 2016; and the fourth cohort completed their program May 2017. Participants consisted of fifty-five new nurse preceptors from nursing homes in New Jersey who expressed interest in the program. The curriculum was developed and delivered by faculty from Rutgers University School of Nursing, hired by NJAC based on their knowledge of the long-term care setting and the patient population.

Although the NJAC preceptor education program was five days in length, the content focused on the role of the preceptor and specific behaviors and strategies to employ in the work setting were limited to the first day only. The remainder of the days reviewed geriatric care issues and competencies for new nurses, providing preceptors with information on the concepts to be covered in detail with new nurse residents in their educational program. This study addresses only the specific topics covered in day one. A schematic of each day for the full preceptor training is outlined in Table 1 below.

Table 1. Outline of preceptor training schedule

Day 1	Day 2	Day 3	Day 4	Day 5
Preceptor Role	Current Issues in Care of the Older Adult	Application Nurse of the Future Competencies	Using Quality Improvement and Evidence-Based Practice to Achieve Better Outcomes	Clinical Teaching Strategies for Enhancing Knowledge, Attitudes and Skills in Nurse of the Future
Adult Learning Principles	Age Related Changes	Using Information & Technology to Enhance Safety and Patient-Centered Care	Applying Professionalism, Leadership, Quality Improvement and Evidence-Based Practice	Competencies and Gerontology Nursing
Critical Thinking	Age Related Sensitivity Activity	Strategies for Communication, Teamwork, Collaboration and Safety	Quality Improvement Project Planning	
Stages of Transition	Geriatric Syndromes: Depression Delirium			
Giving and Receiving Feedback				

The curriculum for the NJAC preceptor education program was designed to provide an introduction to the preceptor role and various key strategies to implement as preceptor. The topics addressed key preceptor components identified in the literature (Boyer, 2008; Kim, 2007; Tsai et al., 2014). The adult learner topic employed discussion and lecture to address the relevance of using teaching/learning strategies based on the new nurse's learning style, generational and cultural influences, and motivation for learning. The topic of critical thinking used discussion, videos, and lecture to identify the new nurse's level of critical thinking, and apply reflection and higher-level questions to foster critical thinking. Transition to practice used discussion and group problem solving to identify the new nurse's level of competence, transition challenges faced in the workplace, and methods to deal with conflict during the transition. Finally, feedback, used case scenarios, paper guides, and role play to assist the preceptor in

providing constructive feedback to new nurses as they observed their performance in the work setting. Concepts such as transition to practice, critical thinking, and adult learning required the preceptor to identify and interpret the new nurse's thoughts and feelings in order to provide support and information. Activities and strategies involved in the implementation of feedback were based on directly observable behaviors exhibited by the new nurse in the work setting, whether in delivering patient care, or communicating with colleagues, patients, and physicians. The topics covered in the program are listed in Table 2.

Table 2. Concepts and teaching strategies

Concept	Teaching Activities/Strategies
Adult Learner: <ul style="list-style-type: none"> • Teaching strategies based on learning styles • Generational/cultural influences • Motivation for learning 	Learning style inventory (lecture/survey and discussion) Generational, cultural differences (discussion) Learning motivation survey (survey and discussion)
Critical Thinking: <ul style="list-style-type: none"> • Strategies to stimulate higher level questioning • Pitfalls to critical thinking • Diagnosing level of critical thinking 	Higher level questioning (discussion and video) Reflection on blocks to critical thinking Diagnosing level of critical thinking (group discussion and problem solving)
Transition to Practice: <ul style="list-style-type: none"> • Novice to expert levels of competency • Phases of transition and ways to overcome reality shock • Identify challenges and solutions 	Discussion of novice to expert steps (discussion) Phases of transition (lecture) Group work to identify challenges to practice (group work to share info and problem solve)
Providing Feedback: <ul style="list-style-type: none"> • Characteristics of feedback • Components of feedback • Methods of providing feedback 	BEERS form (practice scenarios in small groups, use of paper guides) Case scenarios (group discussion and problem solving) Role play (small group and large group discussion)

This program was developed as a professional development/education series and was conducted in a classroom setting on the Rutgers campus. The location was chosen as a geographic midpoint for all participants. Teaching/learning was carried out using active learning strategies including role-play, group problem solving, clinical scenarios, and case studies. Through these strategies new preceptors were able to “try out” aspects of their role, such as giving feedback, as they prepared to work with a new nurse in their facility.

Participants

Prospective participants included all 55 nurses who took part in the NJAC preceptor education program. Each of the nurses were preceptors from long-term care facilities. An introductory email (with attached recruitment flyer and survey link) was sent to preceptors who participated in the NJAC preceptor education program informing them of the study, and requesting their assistance in addressing gaps in the program that impact implementation of the role (Appendix E and F). Based on projected turnover and changes in email addresses, a proposed sample of 40 to 45 nurse preceptors was anticipated. While this is a 70-80% return rate, the participants had established relationships with the researcher through her role as NJAC preceptor education program faculty, and continued contact via professional conferences, meetings, and professional activities. Nurse preceptors were contacted directly from emails contained in the NJAC preceptor education program database. From this list of potential participants, five of the initial invitation emails were undeliverable and these preceptors could not be located by any other means. The remaining 50 received a personal link to the survey for completion. Reminder emails were sent weekly to non-respondents throughout the survey period. Survey period was open from November 16, 2017 until January 27, 2018. Thirty-two preceptors completed the survey for an actual response rate of 58%.

Interview participants were a subset of the survey participants. It was reasoned that this sample would mirror the percentages of innovator categories based on Roger's framework (the degree to which an individual is likely to adopt an innovation related to others in the social system); innovators 2.5%; early adopters 13.5%; early majority 34%; late majority 34%; and laggards 16%. To obtain a reasonable number of interview respondents in the innovator categories to analyze results, categories were combined (i.e. innovators/early adopters; early adopters/early majority) to obtain a sample size of 5 for each combined innovator category. The goal was to conduct 20 interviews with proportionate numbers of participants from each innovator category: five from the innovator/early innovator category; five from the early majority category, five from the late majority category; and five from the laggard category. Categories that had less than five participants who agreed to be interviewed, were shifted up for the higher scoring respondents to include enough from the "early adopter" category to create a group of at least five respondents in a category; and categories shifted down for the lower scoring respondents to include enough from the "late adopter" category. All survey respondents were contacted to be interviewed for the study to further discuss the preceptor educator program in greater detail. Selection was made using a stratified random sample, as additional persons were contacted from each innovator category if the original participant declined to participate. This continued until all possibilities were exhausted.

Materials

Since the four cohorts concluded at different periods of time between April 2015 and May 2017, each participant received a list of concepts with one or two pertinent activities for each concept to ensure they were able to recall and reflect accurately on the program (Appendix C). Participants were asked to indicate which cohort they participated in as part of the

demographic section of the survey. Two measurement tools were used: a quantitative online survey and a qualitative in-person interview. The data gathered from the online survey provided quantitative data to address research questions one and two. It also provided the innovator category to address research questions three and four. Interviews based on individual preceptor survey data were conducted with preceptors to gain a richer view of the understanding and application ratings obtained from the survey. The numerical rating obtained in the survey tool for each concept (adult learning strategies, promoting critical thinking, providing feedback, and supporting new nurses through reality shock/role transition) was elaborated and enriched as the interview participants were given the opportunity to provide examples of how they applied each concept in the clinical setting. They were asked to discuss specific teaching/learning strategies employed in each NJAC preceptor education program concept and the benefits or gaps in these strategies that impacted their ability to apply the knowledge/concepts in the clinical setting. The qualitative data obtained in the interviews addressed questions one and two using all interview transcripts for the total sample, as well as question three and four as data was also analyzed based on aggregating it by innovator categories. A more detailed description of each tool is described below.

Survey. The online survey consisted of three sections: (1) participant demographics; (2) individual innovator category score (Measure of Innovativeness Tool); and (3) participant perceptions of how well the NJAC program met their learning needs and facilitated application of the role in the work setting (Training Course Perception Scale). The full survey is included in Appendix B. The online survey began with a consent form that included a brief introduction and purpose of the survey as well as noting that all responses will be kept confidential. Participants

either clicked an agreement statement to continue the survey, or a decline to participate statement to end the survey.

Demographics. Demographics and individual characteristics were measured in the first section of the survey. The demographic section consisted of five questions answered through forced-choice options. These items addressed characteristics collected in previous preceptor studies (Clement-O'Brien et al., 2011; Tsai et al., 2014). Participants were surveyed for their highest level of nursing education (associate, bachelor, master's); their position in the institution (staff nurse, unit manager, educator, assistant director of nursing, director of nursing); years of experience in the position (0-3 years, 4-6 years, 7-10 years, greater than 10 years), cohort attended, and number of new nurses precepted since ending the program. Studies examining nurse leaders and their innovator category (Clement-O'Brien et al., 2011; Tsai et al., 2014) noted nurses with a higher level of education and job position which puts them in the role of leader (either by leadership or clinical expertise) are more likely to score higher on the innovativeness measures (Rogers, 2003).

Individual innovator category scale. The second section of the survey measured a participant's innovator category using the *Measure of Innovativeness Tool*. This tool is an instrument that predicts willingness to adopt innovations across populations that differ in age and socioeconomic status (Hurt et al., 1977). Unlike tools that measure innovativeness based on a time taken to implement the innovation, the measure of innovativeness tool considered innovativeness as a personality characteristic of a person's willingness to change (Rogers, 2003; Goldsmith, 2011; Hurt et al., 1977). This 20-item Likert scale tool consisted of 12 positively and eight negatively worded statements that address the key tenets of Rogers' (2003) framework including comfort with risk-taking and level of social status and power as opinion leader in the

work setting. Scoring negatively and positively worded items separately and combining in a formula yielded the total score, with a maximum potential score of 100. A range of scores was assigned to each category of innovator:

<46 = laggard

46-56 = late majority

57-68 = early majority

69-80 = early adopter

>80 = innovator

The tool was tested by Hurt et al. (1977) for construct and predictive validity on a group of students enrolled in an innovative curriculum. A coefficient alpha of .94 was obtained for the 20-item scale. Evidence of construct and predictive validity was reported, as scores on the tool were positively associated ($r = .50$) with a measure of opinion leadership. Further reliability and validity testing of the tool was done by Goldsmith, (1986) and later Pallister and Foxall (1998). Results showed the tool was internally consistent and correlated with three other measures of innovativeness, and reliability was at a coefficient alpha of 0.89 (Goldsmith, 1986).

Training Course Perception Scale. The third and final section of the survey measured participants' perceptions of their own understanding and ability to apply the NJAC preceptor education program concepts. The *Training Course Perception Scale (TCPS)* is an instrument developed to collect information on a preceptor training program conducted for preceptors in a specific hospital system. It is based on the participating preceptors' perceptions of how well the topics met their learning needs as well as the usefulness of each topic in applying the preceptor role in the work setting (Chang et al., 2015). In Chang et al.'s (2015) implementation of the TCPS, two columns were designed for each session of their preceptor education program. In the

first column, participants were asked to rate each course from 1 (least fulfilling) to 4 (most fulfilling) in meeting their learning needs. In the second column, participants were asked to rate each course from 1 (least fulfilling) to 4 (most fulfilling) on the usefulness of the course in applying the concepts/content in the clinical setting. An expert panel established content validity for the TCPS (Chang et al., 2015). For the purpose of this study, the four-point Likert scale used to rate fulfillment in the Chang et al. (2015) study was adapted to a six-point Likert scale ranging from zero (a “zero” option was added to indicate the program provided no impact) to five in understanding for the first scale, and application for the second scale (Appendix C). Participants were asked to rate each concept covered in the NJAC preceptor education program based on understanding in one column, and application in the second column. The two columns from the TCPS were reworded to address descriptions of knowledge and application instead of feelings of fulfillment in the concept. The knowledge/understanding scale included:

- 0 = I do not understand the concept at all or very minimally
- 1 = I can recall and describe the preceptor concept
- 2 = I can describe and explain the preceptor concept
- 3 = I can explain the concept and use it in a familiar work situation
- 4 = I can use the concept and draw connections to a less familiar work situation
- 5 = I can draw connections to the work situation and use the concept to critique or alter the decisions I make

The application/implementation scale included:

- 0 = I cannot repeat or mimic the activities, and cannot apply to any situations
- 1 = I can repeat or mimic the activities that were covered in class, but cannot apply to a situation

2 = I can carry out an activity in a situation with written or verbal instruction

3 = I can carry out an activity without assistance via written or verbal instruction

4 = I can combine multiple activities to meet a new or unusual situation in the clinical setting

5 = I can design my own activities to meet new or unusual situations

The use of online survey methodology to gather demographic and evaluation of educational program effectiveness data is grounded in the literature. The majority of these studies used survey methodology to gauge preceptor perceived competence, skills, and support *after* participating in a preceptor-training program (Chang et al., 2015; Creswell, 2014; Sandau et al., 2011; Smedley et al., 2010; Tsai et al., 2014). Surveys were conducted over a variety of time periods—from immediately following the program, three months after completing the program, six months after completing the program (Zahner, Tipple, Rather, & Schendzielos, 2009), and up to four years after program completion (Smedley et al., 2010).

Interview. Following collection and organization of data from online surveys, interviews were conducted to gather clarification, richer explanations, and elaboration of the responses collected from the online survey methodology. The interview was intended to better describe the gaps in preceptor education, and to form the basis for a better understanding of needed revisions to the educational design. The full interview protocol is provided in Appendix D. The preceptor was asked a series of open-ended questions for each concept: adult learning, critical thinking, providing feedback, and supporting the new nurse through reality shock/transition. Questions gathered information regarding their overall experience as participants in the program. The participants were also asked to provide an example of how they were able to apply the particular concept in the work setting. In addition, they reflected on

which activities were most beneficial for each concept. The individual's rating for their perceived understanding/application of each concept was discussed to identify specific benefits and gaps in the curriculum design that contributed to their rating. For example, reflecting on the session providing feedback, the preceptor was asked to provide examples of how they applied the concept in the work setting. Reflecting on the various activities conducted during the feedback session (such as case scenarios, feedback dialogue resource, and video with follow-up questions) the preceptor was asked to point out which activities were particularly beneficial and why they found these activities beneficial. Finally, the rating given on the survey for understanding/applying feedback was reflected to discuss specific reasons why the preceptor decided on that rating. The protocol for the interview includes:

- Introductions and short presentation of interview (including the purpose of the study, review of consent form, instructions to stop interview, ask for clarity.
- Introductory question: Describe overall experience as a participant in the NJAC preceptor education program
 - Probing questions/prompts: Can you tell me more about how you were able to implement content of various sessions
- First follow-up question: **Adult Learning** experiences- examples of how able to apply
 - Probing questions/prompts: specific materials/activities that were most beneficial; challenges in applying concepts; reflect on survey score.
- Second follow-up question: **Feedback** experiences-examples of how able to apply
 - Probing questions/prompts: specific materials/activities that were most beneficial; challenges in applying concepts; reflect on survey score

- Third follow-up question: **Critical thinking** experiences- examples of how able to apply
 - Probing question/prompt: specific materials/activities that were most beneficial; challenges in applying concept; reflect on survey score
- Fourth follow up question: **Transition** to professional experiences-examples of how able to apply
 - Probing questions/prompt: specific materials/activities that were most beneficial; challenges in applying concept; reflect on survey score
- Summarizing statements Summarize participant statements regarding experience with program, ability to apply, benefits and challenges for each concept.
- Concluding question- invite further comment

An additional intent of the interview was to gather information from preceptors on factors impacting their role including: preparation/education received; preparation/education that should be received; additional content, materials, and resources that should be incorporated into the revised educational design; and benefits and challenges of the preceptor role (Luhanga et al., 2010). Luhanga et al. conducted interviews not only for logistical purposes (due to participants work schedules and multiple geographic locations) but also to gain a “broad range of experiences...to generate rich and meaningful data on the preceptors’ experience with role support and development” (Luhanga et al., 2010, p. 5). Gathering richer data based on preceptor perceptions was to inform the potential revision of the current NJAC preceptor education program design so that it could better provide the necessary knowledge and competencies for preceptors with differentiated learning needs to apply in guiding new nurses.

Procedure

Before conducting the study, the study proposal, informed consent procedure, survey, and interview protocol were reviewed and approved by the Rutgers University Institutional Review Board, Protocol # 18-045.

Survey procedure. The proposed survey was created in Qualtrics. A link was assigned and tested by the researcher prior to releasing to contact participants. Upon testing and confirming the link as operational, a personalized link was created for each participant in order to track survey completion, and data specific to a particular respondent. The Dillman method for survey follow-up was used (Dillman, Smyth, & Christian, 2009). A personalized email was sent to all preceptors participating in the NJAC preceptor education program alerting them to the study (Appendix E) on November 9, 2017. The following week, an email and flyer with link to the survey was sent to nurse preceptors who participated in the NJAC preceptor education program. The flyer and email contained information about the purpose of the study, and instructions for accessing the survey (Appendix F). The introductory first page of the survey (Appendix B) provided information to participants regarding the purpose of the survey in context of the study; instructions for completing the survey; methods for maintaining confidentiality, (survey data protected by password only accessible to primary investigator); and consent to participate in the study (click to agree and continue or click to decline and close the survey). Confidentiality was also assured, with no references to name, employer, or individually identifiable characteristics included in the reported data. Confidentiality was ensured by assigning each participant an ID number to protect their identifying information. Preceptors clicked on the link in the email and directly accessed the survey. Surveys were completed in the work setting, at home, or anywhere the participants had internet access. Flyers indicated the time

to complete survey should have been approximately 15 to 20 minutes (based on pilot testing prior to opening link to the population). Researcher's contact information on emails and flyers was provided to encourage preceptors to have questions and concerns answered as well as gather further information on the survey.

Upon completing survey items, respondents were instructed to click "submit" to send their survey. The survey remained open for eight weeks, with weekly personalized follow-up emails sent to partial and non-responders during this period. At the end of the eight-week period, partially completed surveys were utilized, resulting in a different n for different survey items.

Interview procedure. Interviews were scheduled during weeks 8-10 of the study. Surveys were reviewed in aggregate for findings in order to decide what results to follow up on (Creswell, 2014). Innovator category was calculated for each participant. The goal was to obtain a sample of 5 participants from each innovator category. Participants within each of the three innovator categories identified through the survey were randomly selected and were contacted by email two weeks prior to interview dates to ask for their consent to participate in the interview and to schedule a time, location, and date. If a participant elected not to participate, then another participant from that innovator category was selected in their place. Ideally, respondents were interviewed near their place of work to avoid unnecessary travel, or in a mutually convenient location (or via phone interview) if conducted in the evening or weekend. Interview dates and times were scheduled based on interviewee availability and preference.

Upon arriving at the designated meeting place, the participant was greeted and provided with the purpose for the interview (evaluating potential benefits and gaps in the NJAC preceptor education program content, materials, and duration that impacted preceptor learning needs and their ability to apply preceptor role behaviors in the work setting). Written consent was obtained

from all participants (Appendix G). Ground rules were provided, including the confidential nature of information provided during the interview, and each participant's ability to stop, pause, or not answer a question they might feel uncomfortable about. The participant was reminded that the session was being audio recorded. Recorded conversations and electronic notes taken during the interview were stored on an encrypted flash drive. A time limit of 45 to 60 minutes was set for the interview. Sessions were conducted in office and home settings allowing for participant comfort and privacy. The interviewer did not contribute answers or input to the conversation, other than to provide additional prompts to stimulate conversation, or requesting elaboration on a statement (Creswell, 2014; Ryan, Gandha, Culbertson, & Carlson, 2014). Electronic notes were taken to document key points, note observations (such as long pauses between discussions, and tone of discussion) and to provide a summary at the end of the interview. These notes were included in the transcription of data where the audiotape was less clear.

All interviews were conducted by the researcher and audio recorded through a recording application on a laptop. Electronic notes were taken during the interview to pace the interview and to write down a statement or idea that required further probing so as to not interrupt the respondent at an inappropriate time. Also, any observations of nonverbal communication or summary points that came to mind were recorded immediately after the interview in an electronic notebook. To provide the most complete database for analysis, recordings were transcribed verbatim. Interview length averaged 20 minutes. All transcriptions were proofread by listening to the recorded interview and reading the transcript. Statements and key ideas were summarized at the end of each interview and each participant was asked to confirm the conversation, correct any inaccurate statements, or add clarifying remarks.

Data Analysis

An explanatory sequential mixed methods design involves a two-phase process of data analysis. The quantitative and qualitative databases were analyzed separately. In this case, the quantitative results gained from the survey were more fully explained by the results gained from the qualitative data obtained in the interviews (Creswell, 2014). The experiences of preceptors were analyzed through the descriptive statistics obtained from the survey and the themes identified from interviews. The innovator categories were examined for different demographics and for different means of understanding and application on the TCPS scales indicated by the results of the online survey. Differences in preceptor experiences for different innovator categories were also analyzed through comparing emergent themes from the interviews grouped by innovator category.

Survey. Data from the survey methodology was analyzed in the following steps:

1. Total number of surveys included all surveys submitted via Qualtrics. Of the 32 completed, 31 completed all items on the survey, while one respondent left 5 of the application items on the TCPS blank.
2. Each completed survey had a numbered code substituted for the name of the participant. The list of names/assigned codes were kept on a separate encrypted flash drive by the investigator. Completed surveys entered into SPSS for analysis contained identifying code only
3. Data was organized in an electronic codebook and loaded into SPSS software for analysis.
4. Demographic data was reported by descriptive analysis including the count for each parameter.

5. Measurement of Innovativeness scale were reported by the total score based on the following instructions. Score ranges were used to identify innovator category for each participant.
 - Scoring:
 - Step 1: Add the scores for items 4, 6, 7, 10, 13, 15, 17, and 20.
 - Step 2: Add the scores for items 1, 2, 3, 5, 8, 9, 11, 12, 14, 16, 18, and 19.
 - Step 3: Complete the following formula: Individual Innovativeness = 42 + total score for Step 2 - total score for Step 1.
6. Innovator categories were assessed for the total n in each category. These categories were used to recruit a minimum of 5 participants in each category for the qualitative interview. When necessary, categories were combined to meet this minimum number of participants.
7. Training Course Perception Scale ratings were calculated to obtain an overall mean for all sessions for each participant. Sample means for each concept (adult learning, critical thinking, support for reality shock/transition, provision of feedback) as well as the sample means for the twelve subcomponents of the four concepts were analyzed using descriptive data including mean and standard deviations. The same was done the means for each innovator category obtained from Measure of Innovativeness scale.

Research questions were addressed based on the results of the descriptive findings (Creswell, 2014), including group means for understanding the four concepts (RQ 1) or group means for applying the four concepts (RQ2). Comparing each innovator category means for understanding

the four concepts addressed RQ 3, and comparing each innovator category means for application of the four concepts addressed RQ 4.

Interview. Data collected from interviews via audiotaping and facilitator notes were analyzed. All audio recordings and notes were transcribed into a single document for each determined innovator category. Data in each document was transcribed by interview question. The interview responses were analyzed in the following process by two persons to ensure interrater reliability:

1. Responses were read, reviewed, and grouped under their corresponding question.
2. Transcripts were highlighted for statements that contained key words (understand, applied/used, benefits, challenges/gaps).
3. Initial codes were created that were representative of the research questions (i.e. examples understanding, examples of application, benefits and/or gaps for understanding and application). These also reflect the literature that addresses the preceptor experience (Carlson et al., 2009; Luhanga et al., 2010; Rogan, 2009).
4. Each response under a code was read and reviewed carefully to get a general understanding of their meanings. Transcripts were analyzed at the statement level, as opposed to individual words.
5. Similarities between responses (same wording, content, or concept) under each code were highlighted in the same color.
6. After finding several responses that addressed the same concept a theme was created (Creswell, 2014).
7. This was done for each code until all responses were grouped into a theme.

8. Transcripts were then divided by innovator category groups (innovator, early adopter, and early majority) and each theme found in the general sample transcripts was analyzed for each innovator category in terms of frequency.
9. Preceptor experiences for each innovator category were described and elaborated based on interview themes found in each innovator category transcript.
10. Themes from various innovator categories were compared for similarities and differences.
11. The researcher and a colleague familiar with the NJAC preceptor education program conducted coding into the four initial codes to ensure interrater reliability.
12. Member checks with interview participants were conducted at the end of each interview by reviewing a summary statement of responses and reflections with each participant.

The use of an explanatory sequential mixed method study addressed the research questions through descriptive statistics of the online survey, and further elaboration through the interview codes and themes. The interviews compared the various innovator categories in identifying the gaps and benefits in educational design. This study attempted to determine if there were unique learning needs for each innovator category. Similarities and differences were analyzed to recommend potential revisions in the NJAC preceptor education program that have the potential to address the needs of the various innovator category participants and lead to a more uniform implementation of the preceptor role.

Chapter 4: Results

Demographics and Innovator Categories

Demographics. The survey collected demographic data from participants including highest level of education; position/job in work setting; years of experience in this position; and the number of opportunities participants had to serve as preceptors since attending the educational program. All demographics for the sample are found in Table 3. Preceptor participant surveys revealed the following educational preparation; associate degree ($n=11$); bachelor's degree ($n=13$); and master's degree ($n=8$). There were no doctoral prepared participants.

Participant job positions included: staff nurse ($n=4$); charge nurse ($n=6$); facility educator ($n=8$); assistant unit manager ($n=1$); unit manager ($n=1$); director of nursing ($n=6$); regional director or other corporate leadership position ($n=6$). No participants were in their current position less than a year. Nine were in their position from one to three years; six were in their position from four to six years; seven were in their position for six to 10 years; and ten participants were in their position for greater than 10 years.

All cohorts were represented in the sample including cohort 1 ($n=8$); cohort 2 ($n=12$); cohort 3 ($n=7$); and cohort 4 ($n=5$). The opportunity to precept other new nurses following their participation in the education program was assessed. Three participants did not have the opportunity to precept additional staff; 13 had the opportunity to precept 1-2 additional new nurses; nine precepted three to five additional new nurses; and seven precepted more than five new nurses following their initial new nurse.

Table 3. Demographic data

	Innovator (n=4)	Early Adopter (n=20)	Early Majority (n=8)	Total Sample (n=32)
Education				
Associate (ASN)	50% (2)	35% (7)	25% (2)	34% (11)
Bachelor (BSN)	25% (1)	45% (9)	38% (3)	41% (13)
Master (MSN)	25% (1)	21% (4)	38% (3)	25% (8)
Job title				
Staff		15% (3)	13% (1)	13% (4)
Charge RN	50% (2)	5% (1)	38% (3)	19% (6)
Educator		25% (5)	38% (3)	25% (8)
Asst. manager		5% (1)		3% (1)
Manager	25% (1)			3% (1)
Director of nursing		30% (6)		19% (6)
Other	25% (1)	20% (4)	13% (1)	19% (6)
Yrs. in job				
1-3	75% (3)	20% (4)	25% (2)	28% (9)
4-6		25% (5)	13% (1)	19% (6)
6-10		25% (5)	25% (2)	22% (7)
>10	25% (1)	30% (6)	38% (3)	31% (10)
Program cohort				
1 (Apr.2015)		40% (8)		25% (8)
2 (Nov.2015)	50% (2)	20% (4)	75% (6)	38% (12)
3 (Dec 2016)	25% (1)	25% (5)	13% (1)	22% (7)
4 (May 2017)	25% (1)	15% (3)	13% (1)	16% (5)
# preceptees				
0		10% (2)	13% (1)	9% (3)
1-2	50% (2)	35% (7)	50% (4)	41% (13)
3-5	50% (2)	20% (4)	38% (3)	28% (9)
>5		35% (7)		22% (7)

Individual innovativeness scores. The second part of the online survey addressed individual innovativeness. This scale is designed to measure an individual's orientation toward change and how an individual adopts innovation. Categories range from innovator (IN) for individuals scoring higher than 80; early adopter (EA) for individuals scoring between 80-69; early majority (EM) for individuals scoring between 68-57; late majority (LM) for individuals

scoring between 56-47; and laggards (LAG) for individuals scoring below 47. Rogers (2003) postulated that the general population fit into these categories following a normal distribution, with innovators comprising 2.5% of the population, early adopters comprising 13.5%; early majority comprising 34%; late majority comprising 34%; and laggards comprising 15%.

Individual innovativeness survey scores for this study indicated that the participants skewed to the higher end of the innovativeness scale, with innovators ($n=4$) comprising 12.5% of this sample; early adopters ($n=20$) comprising 62% of the sample; and early majority ($n=8$) comprising 25% of study participants (Table 3). None of the participants scored in the late majority or laggard categories.

Interview innovator categories. Interviews were conducted with a stratified random sample of preceptors from each innovator category. A total of 15 participants consented to be interviewed: two from the innovator category (IN); 10 from the early adopter category (EA); and three from the early majority category (EM). In order to have at least five participants within each innovator category for analysis, three of the interviewees scoring highest in the early adopter category were shifted to the innovator group, and two of the lowest scoring in the early adopter category were shifted to the early majority group. This shift created groups of at least five interviewees in each of the individual innovator categories. Table 4 demonstrates the resulting demographics from these three interview groups, including the original innovator score and category.

Table 4. Interview participant demographics

Individual innovator score from survey	Assigned interview group	Education	Job title	Yrs. in job	# preceptees
Innovator (IN)					
84 (IN)	IN	MSN	Regional director	1-3 yrs.	1-2
81 (IN)	IN	ASN	Charge nurse	1-3 yrs.	1-2
78 (EA)	IN	BSN	Director of nursing	>10 yrs.	1-2
77 (EA)	IN	MSN	Regional director	4-6 yrs.	1-2
77 (EA)	IN	ASN	Educator	1-3 yrs.	>5
Early Adopter (EA)					
76 (EA)	EA	MSN	Regional director	>10 yrs.	1-2
75(EA)	EA	ASN	Director of nursing	6-10 yrs.	>5
73(EA)	EA	BSN	Director of nursing	>10 yrs.	0
72 (EA)	EA	MSN	Educator	4-6 yrs.	3-5
71 (EA)	EA	ASN	Charge nurse	4-6 yrs.	1-2
Early Majority (EM)					
71 (EA)	EM	MSN	Director of nursing	>10 yrs.	1-2
71 (EA)	EM	BSN	Director of nursing	1-3 yrs.	>5
68 (EM)	EM	BSN	Director of nursing	1-3 yrs.	>5
66 (EM)	EM	ASN	Educator	>10 yrs.	0
59 (EM)	EM	MSN	Educator	>10 yrs.	3-5

Research Question 1

What gaps in understanding preceptor concepts do nurses in the NJAC preceptor education program identify when reflecting on their participation in the program?

Survey results of impact on understanding of key concepts. Participants were asked to rate their knowledge and understanding of the key concepts presented in the education program

(adult learning strategies, critical thinking, transition to practice, and provision feedback)

following their participation in the preceptor education program. Ratings were obtained through the use of a six -point Likert scale, ranging from “0” (no understanding of concept) to “5” (able to draw connections to the work situation and use the concept to critique or alter the decisions made). Table 5 lists each of the concepts participants were asked to rate and the mean rating of understanding for those key concepts.

Table 5. Mean rating of understanding of key preceptor concepts

Concept	Mean Rating (N=32)
Adult Learning (AL)	3.9
Learning style	4.0
Generation/culture	3.8
Motivation	3.9
Critical Thinking (CT)	3.7
Higher questioning	3.9
Pitfalls	3.7
Diagnose level of CT	3.6
Transition (TN)	3.8
Novice to expert	3.6
Reality shock	3.7
Challenges	4.0
Feedback (FB)	4.0
Characteristics	4.0
Components	3.9
Methods	3.9

The overall level of understanding for the group ($M = 3.8$) indicated participants on average could explain each concept covered in the program and use it in a familiar work situation. Individually, participants' ratings ranged from being able recall and describe the particular concepts (1.0), to being able to draw connections to work situations and use concepts to critique or alter the decisions they made (5.0).

Although participants felt they could on average explain each of the four preceptor education concepts and use their understanding in a familiar or in some cases a new or unfamiliar work situation, there were slight differences in the ratings. Critical thinking, or more specifically, the ability to diagnose a new nurse's level of critical thinking was rated lowest ($M = 3.6$), as was the understanding of the new nurse's progression from novice to expert ($M = 3.6$). The concepts rated highest for participant understanding included characteristics of feedback and assisting new nurses with solutions to transition issues ($M = 4.0$).

One possible interpretation of these differences in the understanding ratings was that the higher rated concepts were more practice-based than theoretical. Discussions in both transition challenges and characteristics of feedback revolved more around the participant actions in their work settings (giving feedback on new nurse performance and solving problems). On the other hand, diagnosing levels of critical thinking were addressed more in a theoretical way, with participants not able to connect the concept to specific examples in the work setting. The idea of identifying the level of a new nurse's thinking was less concrete than giving feedback to the new nurse on their proficiency in performing a task or medical procedure. However, this is not a clear indication of a gap in the preceptors' understanding a concept based on the rating it was assigned.

Interview themes of benefits and challenges to understanding of key concepts.

Participants in the interviews were asked to reflect on their understanding of the four preceptor concepts and to identify any program benefits or challenges they felt impacted their level of understanding. The key theme that arose in discussing the preceptor program impact on the participants' understanding of all four concepts was the importance of understanding the *unique needs of the new nurse* when planning teaching strategies, fostering critical thinking, supporting the new nurse in transition, and providing feedback to the new nurse. When asked about gaps or challenges that might have impacted the understanding of the four concepts, two themes were identified: *in-person class setting* and *amount of program material* distributed. When asked about benefits that might have impacted the understanding of the four concepts, one theme was identified: participation in *group discussions* during the class.

When asked about the impact the program had on their understanding of preceptor concepts, interviewees indicated that they were at least aware of the broad tenets of each concept. However, participants did note that there were crucial aspects that they were not previously aware of that would help them in their role as preceptor, including the importance of understanding differences in learning style and motivation for each preceptee. They felt that this program increased their understanding of the adult learner. The common theme that participants came away with was the need to continually adjust their teaching and mentoring approach to meet the *unique needs of the new nurse*. One participant stated, "It's important to know the new nurse's learning style to give them the best learning experience." Another noted, "You can't use the same processes for all new nurses. New people need different ways of understanding the concept or whatever it may be." The idea of culture and generational differences impacting the learning process was also a consistent theme: "Culturally, I found there

is a huge difference between the needs of the new nurse and an older nurse starting a new career. I found I had to adjust my style.”

Their understanding of critical thinking focused on their role in assessing the new nurse and adjusting their teaching strategy to assure the new nurse understands the rationale behind his or her actions. One participant commented on this need to ask higher level questions, “I think the crucial thing that I learned is asking the right questions to obtain answers ...it gave him an opportunity to explain in more detail what he thought was necessary.” Another preceptor cited the importance of understanding her role in helping the new nurse develop critical thinking skills, “Asking higher level questions- it is important for the preceptor to learn how to do this to increase the new nurse understanding.” This critical thinking understanding was also applied to the concept of new nurse transition. The theme of meeting the new graduate’s needs was evident as participants talked about understanding the work setting from the perspective of the new nurse. “We don’t just become an expert- it takes a while. Give them confidence.” Another participant suggested, “We tend to let them go and if they don’t ask (a question), we ignore them, instead of stopping and asking them how they are doing.” A final participant summed up her understanding of transition by sharing, “I think it’s changed a lot about how I personally approached new graduates- with a more open mind.” Participants continued the meeting the needs of the new nurse theme in their understanding of feedback. “The preceptor needs to demonstrate acceptance that the trainee is still developing and given them feedback”. Recognition of the new nurse’s unique learning, critical thinking, transition, and feedback needs was perhaps the key understanding participants gained from the NJAC preceptor education program.

When queried about the program's impact on their understanding of adult learning strategies, critical thinking, transition to practice, and feedback, participants did not identify any gaps in content, resources and material, or teaching strategies they felt would negatively impact their understanding of the concepts. However, the *amount of program material* made available via handouts, websites, and power points were not fully accessed or utilized. All materials used in the program (including power point presentations for each concept, a list of references, websites containing information on the concept, supplemental readings) were given to participants in a large binder. In addition, a learning management system was employed that also contained these materials electronically. Several participants noted that this could be daunting. One interviewee commented, "There was a lot of material- that binder was pretty big", while another added, "You know I don't mean to sound so negative. These are wonderful tools, but in the scheme of things how am I going to get all this done?" The *in-person class setting* was also mentioned as a challenge to gaining the necessary knowledge and understanding. Travel and time away from work made attendance without interruption difficult. "Just wished you guys could do a satellite program. One of the participants from our organization couldn't do the long-distance drive. And you know, she was so disappointed that she couldn't attend." Another explained the challenge of planning her schedule to attend, "The program was very long when you first look at it... how we are going to squeeze all this in?" While class attendance and utilization of a large volume of materials was discussed as a program challenge, these factors were not attributed as gaps in understanding key concepts.

Despite the challenges of organizing and using the large amount of distributed materials and arranging schedules to attend the program, participants were noted that the biggest benefit the program provided to their understanding of the preceptor role were the opportunities to

participate in *discussion groups* with other participants and learn from each other's experiences. One interviewee summed up the value of the discussions; "The discussion really was a good button to be able to see realistically what's going on in your place, what's going on in my place, what are the challenges we share. And sharing how others deal, because others may have had the same challenges."

The survey and interview data did not provide evidence of gaps in the program that impacted the understanding of participants. Although feedback was rated highest in understanding, interviewees could provide examples of how their understanding for each concept was increased by the program. Program benefits related to a particular strategy used in the program. Participation with group discussions was noted to be a benefit of impacting understanding. This was also a primary strategy used in addressing feedback in the class setting. Gaps identified were not considered as impacting the level of preceptor understanding, and were not gaps related to a specific program inadequacy. Rather, the gaps were more reflective of the preceptor (scheduling challenges to attend class and organization skills at work to use materials).

Research Question 2

What gaps in the application of preceptor concepts do nurses in the NJAC preceptor education program identify when reflecting on their participation in the program?

Survey results of impact on application of key concepts. Participants were asked to rate their ability to apply the key concepts (adult learning strategies, critical thinking, transition to practice, and provision feedback) following their involvement in the preceptor education program. Ratings were accomplished by the use of a six -point Likert scale ranging from the inability to repeat, mimic, or apply concept, to designing activities to meet new situations in the work setting. The overall level of application for the group ($M= 3.7$) indicated the average

participant could at least carry out an activity without assistance via written or verbal instruction. Individually, participants' ratings ranged from being able to repeat or mimic activities that were covered in class, but cannot apply to a work situation (1.0) to designing their own activities to meet new or unusual work situations (5.0). The mean rating for application of each concept is listed below (Table 6).

Table 6. Mean rating of application of key preceptor concepts

Concept	Mean rating ($N = 32$)
Adult Learning (AL)	3.6
Learning style	3.5
Generation/culture	3.7
Motivation	3.7
Critical Thinking (CT)	3.6
Higher questioning	3.6
Pitfalls	3.6
Diagnose levels of thinking	3.6
Transition (TN)	3.7
Novice to expert	3.7
Reality shock	3.6
Challenges	3.8
Feedback (FB)	3.8
Characteristics	3.8
Components	3.8
Methods	3.8

The mean ratings for each of the four preceptor education concepts indicated participants felt they could at least carry out an activity without written or verbal instructions, although there

were slight differences in the ratings. Critical thinking, was rated lowest ($M= 3.6$). Feedback ($M= 3.8$) was rated highest. Each of these feedback components was more practice-based than theoretical. Due to this practice-based nature, the activities for the feedback class revolved more around the participant application in their work settings. Feedback was perhaps the most practical skill for the preceptors to employ with their new nurse preceptor. On the other hand, critical thinking was addressed more with activities such as case studies focusing on a hypothetical situation, rather than having participants provide real-life examples from their work setting.

In each case the mean rating for the impact the program had on application of educational concepts was lower than the mean rating for the impact the program had on understanding the educational concepts. Being new to the preceptor role, these more theoretical concepts were not applied in daily work activities before becoming a preceptor.

Interview themes of benefits and challenges to application of key concepts.

Participants in the interviews were asked to reflect on their application of the four preceptor concepts and to identify any program benefits or challenges they felt impacted their level of application. Similar to reflection on understanding, the theme of meeting the *unique needs of the new nurse* was identified. When asked about gaps or challenges that might have impacted the application of the NJAC preceptor education program, two themes were identified: *role conflict* and *lack of support* after the program. When asked about benefits that might have impacted the application of the four concepts, two themes were identified: the use of *program materials as scaffolds*, and *introducing preceptor concepts to others* in the work setting. Each theme is discussed below.

When asked about the benefits the program had on their application of preceptor concepts, interviewees indicated that they were at least aware of the basic applications of each concept. There was less discussion of the concepts themselves than occurred when queried about the concepts and their understanding. Instead, interviewees addressed the methods they employed and how it made a difference in the work setting. The focus was more on the work setting than the classroom. While the understanding examples pointed to concepts from the classroom setting, application examples addressed the application and results of concepts (i.e. timeliness of giving feedback, developing educational materials based on adult learning concepts) in the work setting. However, participants did note that there were crucial aspects that they were not previously aware of that would help them in their role as preceptor, including the importance of understanding the *unique needs of the new nurse* and others in the workplace. On applying the concept of feedback, an interviewee mentioned the benefit of the program; “We’ve changed our practice so that we don’t wait until your evaluation. We actually meet with the nurse at the time of the event to discuss what should be done, but try to get the new nurse to understand what else you can look at besides what you are observing right now.”

When queried about the program’s challenges or gaps in applying adult learning strategies, critical thinking, transition to practice, and feedback, two themes emerged: *role conflict* and *lack of continued support*. In some instances, the preceptors felt the expectations of their current nursing position left little time to apply the preceptor concepts when working with the new nurse. The preceptor role was often in addition to their current workload. While discussing the application of feedback one preceptor shared, “I could’ve done a better job, I think. You know, we don’t have just this job. We have, you know the role as an educator so I think I could’ve gotten back sooner to that if I had not had all these other roles.” Another noted,

“You can only spend so much time with each person. It’s just a matter of the resources not being there.” The role conflict theme extended to include facility leaders and administrators who did not understand the breadth and responsibilities inherent in the preceptor role. One participant suggested, “Maybe marketing the program to the administrators would be helpful to get that buy in. Get them to understand what this program is, what the goals are, and what it does for nurses.”

The second theme to emerge when examining program challenges to applying the preceptor role was a lack of continued support from the program. While the program addressed concepts of the preceptor role in a prescribed schedule, demographics from the quantitative survey indicated that there was a range in the number of new nurses preceptors worked with since attending. Interview data identified a challenge in the gap from preceptor education to the entry of a new nurse into the organization. One participant summarized the need for more ongoing education for preceptors as she noted, “Sometimes we come back to the work setting and then we don’t have the opportunity to use it by for six months or more. If you don’t have the opportunity to precept a new nurse in a few months, it becomes harder to remember.” By addressing the need for additional support and education for preceptors, it was hoped that the program could be “brought down to the unit level with a staff nurse” even if he or she was not directly responsible for precepting.

A common benefit theme that appeared from the interviews was benefit of using *program materials as scaffolds* to apply teaching, giving feedback, and fostering critical thinking concepts in the work setting. One participant when discussing her use of teaching methods to meet the needs of verbal and auditory learners stated, “I have posters that we made to present to staff from unit to unit. So not only did we say the message, you know, go through it

verbally, but we showed pictures.” Another noted, “I incorporated information from the website into class for staff education.” One participant used a documentation tool (SBAR) that was demonstrated in class. “I use the SBAR tools to help the new nurse understand the importance of early assessment and intervention. This SBAR helps her to recognize problems and subtle changes in her patient.” A folder with guides to conduct weekly feedback and goal-setting meetings with the new nurse was widely recognized by the interviewees as instrumental to their application of program concepts. “The little folder for weekly and monthly follow-ups, you know I’m setting up the goals and then meeting on a regular basis to make sure that, you know, there is progress and stuff like that and different things that we need to tell her or work on.” These comments provide key examples of how resources and materials were adopted from the program and applied in the work setting to meet the unique needs of the new nurse.

Another theme emerging as a program benefit to application of preceptor education concepts was the idea of *introducing preceptor concepts to others in the work setting*. Participants emphasized the importance of making other staff nurses and nurse leaders in the facility aware of the needs of the new nurse. In working with her staff to deliver constructive feedback to new nurses, one interviewee stated, “People need to hear constructive feedback, but it must be delivered in a way that is gentle and constructive. I have applied this by mentoring others on how to give feedback in a constructive or caring way, especially those with little or no understanding of new graduate progression.” The outreach to others in the work setting was noted to create success in supporting the new graduate. One participant recalled how a supervisor in her organization was very authoritarian in her leadership style, however, “by using the application from the program and meeting with her weekly and going over concerns” the talents and value of the new nurse were now recognized by the supervisor. Themes that emerged

as benefits of the program (scaffolds and learning about the unique needs of the new graduate) focused on components of the program.

Similar to understanding (RQ 1), survey and interview data did not provide evidence of gaps in the program that impacted the application of participants. Although feedback was rated highest in application, interviewees could provide examples of how their application for each concept was impacted by the program. Program benefits related to a particular strategy used in the program (use of scaffold materials). The feedback booklet, which contained meeting checklists, goal setting activities, and communication, was used to provide feedback to new nurses and other staff in the work setting. Gaps identified were not considered as impacting the level of application, and were not gaps related to a specific program inadequacy. Rather, the gaps were more reflective of the preceptor (role conflict and inadequate support after the program). Although survey and interview data does not contain evidence of program components that do not effectively address application, the role conflict experienced by preceptors should not be ignored.

Research Question 3

In what ways (if any) do the identified gaps in understanding of preceptor concepts differ?

Survey results of impact on understanding of key concepts by innovator category.

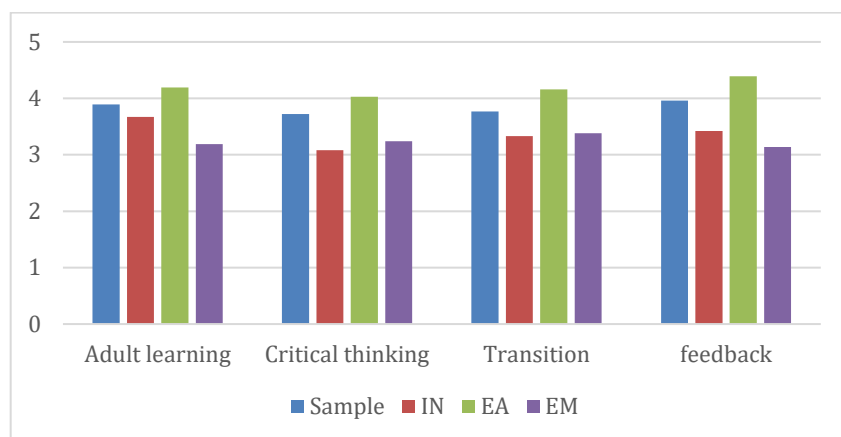
The third question of the study sought to determine if the Training Course Perception Scale (TCPS) demonstrated a difference in the level of understanding of the preceptor education concepts by different individual innovativeness categories. Participant scores on the Individual Innovativeness Scale fell into one of three categories: Innovator (with scores of 80-91); Early Adopter (with scores of 69-80); and Early Majority (with scores of 58-68). When comparing the understanding of preceptor concepts among the three innovator categories, overall understanding

of preceptor education concepts was highest in the **early adopter group (EA)**, followed by the **innovator (IN)** group, and finally the **early majority (EM)** group. The mean ratings by innovator category are listed in Table 7 and a graphic representation is found in Figure 3.

Table 7. Mean rating of understanding by individual innovator category

Concept	Sample <i>N</i> = 32	Innovator <i>N</i> = 4	Early Adopter <i>N</i> = 20	Early Majority <i>N</i> =8
Adult Learning (AL)	3.9	3.7	4.2	3.2
Learning style	4.0	3.5	4.3	3.4
Generation/culture	3.8	3.5	4.2	3.1
Motivation	3.9	4.0	4.2	3.0
Critical Thinking (CT)	3.7	3.1	4.0	3.2
Higher questioning	3.9	3.3	4.2	3.4
Pitfalls	3.7	3.0	4.0	3.3
Diagnose level of CT	3.6	3.0	3.9	3.0
Transition (TN)	3.8	3.3	4.2	3.4
Novice to expert	3.6	3.0	4.2	3.6
Reality shock	3.7	3.3	4.0	3.1
Challenges	4.0	3.8	4.3	3.4
Feedback (FB)	4.0	3.4	4.4	3.1
Characteristics	4.0	3.5	4.4	3.3
Components	3.9	3.5	4.4	3.0
Methods	3.9	3.3	4.4	3.1

Figure 3. Understanding preceptor concept means by innovator category



The EA group also scored highest for each individual concept (adult learning, critical thinking, transition, and providing feedback) as well as the corresponding components for each. In each case the EA means were higher than the overall sample means for each concept and their components. The IN group scored higher than the EM group in their understanding of adult learning and feedback, while the EM group scored higher than the EA group in the areas of transition to practice and critical thinking. The IN and EA group means demonstrated similarities in order of highest to lowest degree of understanding (feedback, adult learning, transition, critical thinking). The EM group demonstrated higher levels of understanding in the transition and critical thinking concepts, followed by adult learning and feedback. Both the EM and IN groups had lower means for all four concepts (adult learning, critical thinking, transition to profession, and providing feedback) than the sample means.

Interview themes of benefits and challenges to understanding of key concepts by innovator category. For RQ 3, interview transcripts were combined according to innovator categories. Data was grouped based on passages that discussed “understanding” of the preceptor concepts. Benefits and gaps were separated, and themes were identified for understanding, benefits, and challenges/gaps based on the frequency something appeared in the transcripts.

Similar to the sample interview themes identified for RQ1, all innovator categories (IN, EA, EM) identified *discussion group* participation as a program benefit to understanding preceptor concepts (adult learning, critical thinking, transition to professional, and providing feedback). Discussion groups provided a source of “networking” and a means to “get the perspectives from a diverse group of people” for the IN group. Interviewees from the EA group saw the benefit of discussion groups as a means to “find support amongst your peer group, someone you can call” to discuss common concerns and issues. Interviewees from the EM group noted that the discussion groups were a way of connecting with a larger scope, “sometimes you’re at a facility and that’s all you know is how things work at your facility.”

When queried about the program’s challenges or gaps in understanding adult learning strategies, critical thinking, and transition to practice, and feedback, two themes emerged: *in-class setting* and *amount of material* provided during the preceptor education program. These themes also appeared as gaps for the sample interview data in RQ1. For this question, the sample was split into innovator categories and *in-class setting* appeared in transcripts for all three innovator categories. However, the IN category were the only individuals interviewed who suggested the use of technology to create an alternative. “I think if you have the opportunity to work, and do something remotely, I think that would be a really big help”, was suggested by IN category interviewees. The EA and EM interviews focused on the commute and interruption of the workflow on the days they needed to be in class.

The second theme, *amount of material* distributed through the program was also identified as a gap in RQ 1 data for the interview sample. However, when transcripts were analyzed by individual innovator category, a difference occurred. The amount of material was not mentioned as a gap for the IN category. IN interviewees spoke about keeping the materials

and using them for educational situations when they arose in the work setting. The EA and EM groups talked about it being a “lot of material” and being unable to go back to it because they were “so involved in other things.” While *in-class attendance* (for all three innovator categories) and utilization of a large volume of materials (for EA and EM categories) was discussed as a program challenge, these factors were not attributed as gaps in understanding key concepts.

Despite the challenges of the EM and EA categories in organizing and using the large amount of distributed materials, and arranging schedules to attend the program (for all categories), all categories agreed that the biggest benefit the program provided to their understanding of the preceptor role were the opportunities to participate in *discussion groups* with other participants and learn from each other’s experiences.

The survey and interview data did not provide evidence of gaps in the program that impacted the understanding of participants in any of the innovator categories. Even with transcripts divided into the three innovator categories, interviewees in each category were able to provide examples of how their understanding for each concept was increased by the program. Similar to the sample interview themes, program benefits related to a particular strategy (discussion groups) used in the program. Participation with group discussions was noted to be a benefit of impacting understanding for all three innovator categories. This was also a primary strategy used to present feedback in the class setting. Like the sample understanding addressed in RQ 1, gaps identified were not considered as impacting the level of preceptor understanding, and were not gaps related to a specific program inadequacy. Rather, the gaps were more reflective of the preceptor (scheduling challenges to attend class and organization skills at work

to use materials). The IN category did not express that the amount of class materials distributed was perceived as a challenge.

Although the EA category had the highest means for understanding all preceptor concepts, it cannot be determined if the innovator category itself, or the demographics of participants in the EA category was more predictive of the ratings for understanding. Examining the educational preparation of sample participants, it was discovered that participants possessing a master's degree had higher means for understanding all concepts than the associates or bachelor's prepared nurses (Figure 4). The EA category had four of the eight master's prepared nurses in the sample. Comparing the understanding means of the sample by job position, it was discovered that participants who were charge nurses in the work setting had the lowest means for understanding in all concepts (Figure 5).

If examining understanding ratings by level of education, masters prepared preceptors rated their overall understanding higher ($M= 4.5$) than their bachelor ($M= 3.7$) and associate ($M= 3.7$) educated counterparts (Table 8). Master's prepared preceptors also rated their understanding higher in the areas of adult learning, critical thinking, transition, and providing feedback and corresponding components than other levels of education. Master's prepared preceptors could draw understanding from the concepts for unfamiliar situations in the work setting, while bachelor's and associate's prepared preceptors could use their understanding of each concept in familiar situations in the work setting.

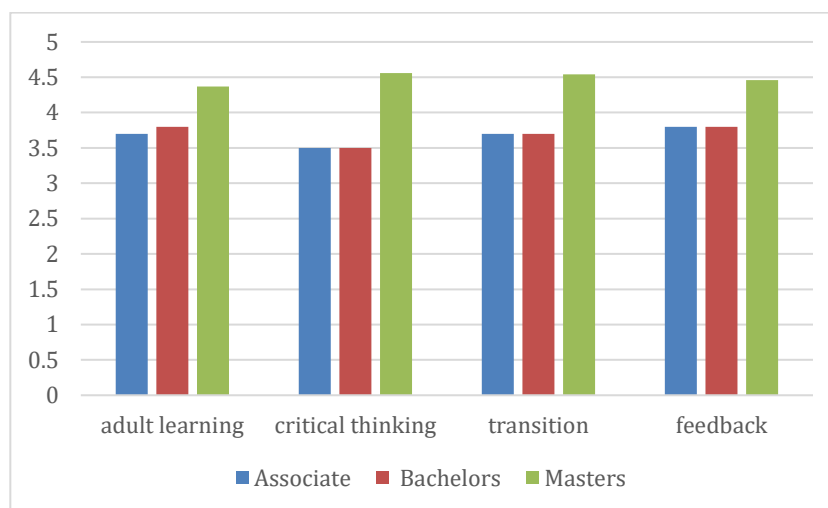
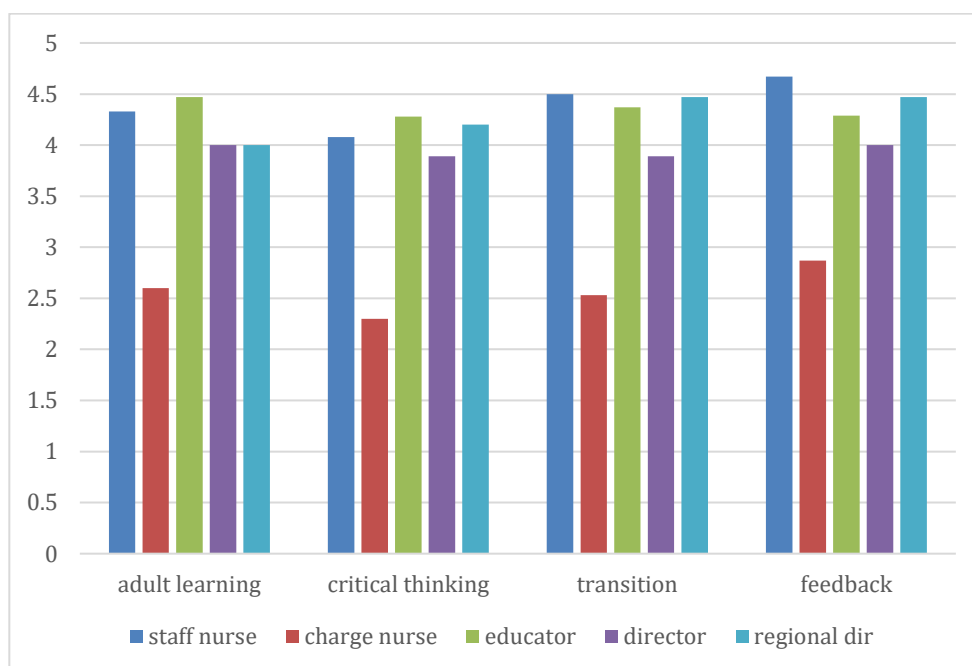
Figure 4. Understanding means by education level*Figure 5. Understanding means by job title*

Table 8. Mean rating of understanding by level of education

Concept	Associate	Bachelor	Master
Adult Learning (AL)	3.7	3.8	4.4
Learning style	3.7	3.9	4.5
Generation/culture	3.6	3.8	4.3
Motivation	3.8	3.6	4.4
Critical Thinking (CT)	3.5	3.5	4.4
Higher questioning	3.7	3.8	4.5
Pitfalls	3.5	3.5	4.4
Diagnose levels of CT	3.3	3.3	4.4
Transition (TN)	3.8	3.5	4.6
Novice to expert	3.8	3.4	4.8
Reality shock	3.7	3.3	4.3
Challenges	3.8	3.8	4.6
Feedback (FB)	3.8	3.8	4.5
Characteristics	3.8	4.0	4.3
Components	3.8	3.7	4.5
Methods	3.8	3.7	4.6

Research Question 4

In what ways (if any) do the identified gaps in effective application of preceptor concepts differ among innovator categories?

Survey results of impact on application of key concepts by innovator category. The fourth question of the study sought to determine if the Training Course Perception Scale (TCPS) demonstrated a difference in the level of applying of the preceptor education concepts by individual innovativeness categories. In comparing the means of the innovator, early adopter,

and early majority respondents, the overall level of applying the preceptor education concepts was highest in the **early adopter group (EA)**, followed by the **innovator (IN)** group, and the **early majority (EM)** group (A graphic representation of this can be found in Figure 7). This finding is similar to RQ 3, where the EA category was highest in understanding. This was also true for each concept (adult learning, critical thinking, transition, and providing feedback) and the corresponding components for each, as the EA group means were highest, followed by IN, and finally the EM group. In each case the EA means were higher than the means for each concept and their components than the means of all participants in the sample. No consistencies or commonalities were observed in order of highest to lowest degree of understanding among the three innovator categories (Table 9).

Figure 6. Application means by innovator category

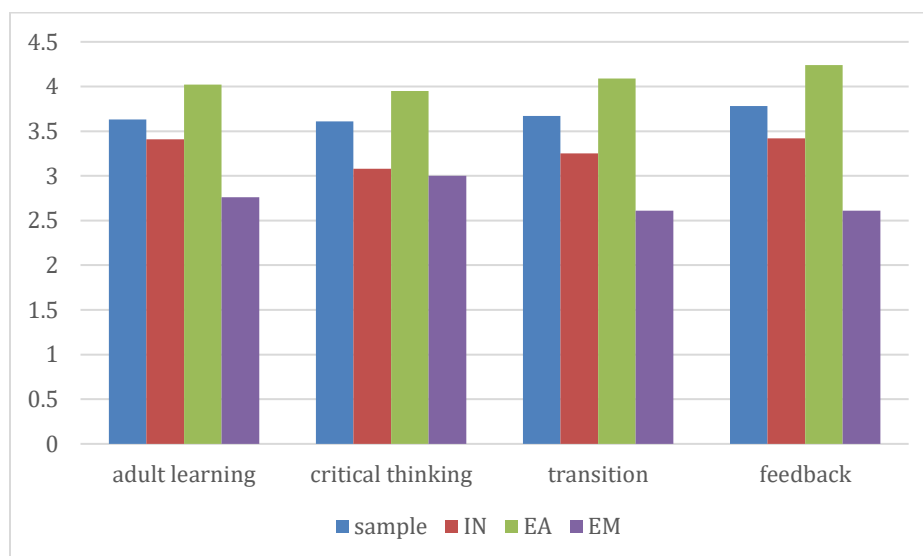


Table 9. Mean rating of application by individual innovator category

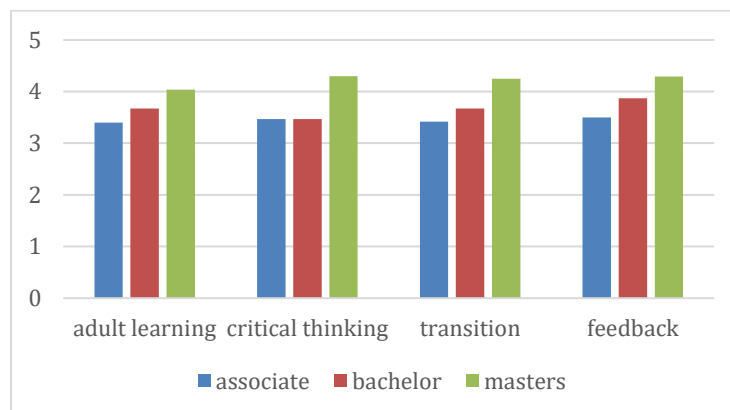
Concept	Sample N=32	Innovator N= 4	Early Adopter N= 20	Early Majority N=8
Adult Learning (AL)	3.6	3.4	4.0	2.8
Learning style	3.5	3.0	3.8	2.7
Generation/culture	3.7	3.5	4.2	2.7
Motivation	3.7	3.8	4.1	2.9
Critical Thinking (CT)	3.6	3.1	3.9	3.0
Higher questioning	3.6	3.0	4.0	3.0
Pitfalls	3.6	3.3	3.9	3.0
Diagnose level of CT	3.6	3.0	3.9	3.0
Transition (TN)	3.7	3.3	4.1	2.6
Novice to expert	3.7	3.0	4.1	2.7
Reality shock	3.6	2.8	4.1	2.5
Challenges	3.8	4.0	4.1	2.7
Feedback (FB)	3.8	3.4	4.2	2.6
Characteristics	3.8	3.8	4.2	2.7
Components	3.8	3.3	4.3	2.7
Methods	3.8	3.3	4.3	2.5

If examining application ratings by level of education, masters prepared preceptors rated their overall understanding higher ($M= 4.0$) than their bachelor ($M= 3.7$) and associate ($M= 3.8$) educated counterparts (Table 8). Master's prepared preceptors also rated their application higher in the areas of adult learning, critical thinking, transition, and providing feedback and corresponding components than other levels of education (see Figure 7). For each concept master's prepared preceptors found they could combine multiple activities to meet a new or unusual situation in the work setting.

Table 10. Mean rating of application by level of education

Concept	Associate	Bachelor	Master
Adult Learning (AL)	3.4	3.7	4.1
Learning style	3.2	3.6	3.9
Generation/culture	3.4	3.8	4.0
Motivation	3.6	3.6	4.3
Critical Thinking (CT)	3.5	3.5	4.3
Higher questioning	3.5	3.5	4.3
Pitfalls	3.5	3.4	4.3
Diagnose levels of CT	3.4	3.5	4.4
Transition (TN)	3.4	3.7	4.3
Novice to expert	3.4	3.6	4.4
Reality shock	3.4	3.6	4.3
Challenges	3.5	3.8	4.1
Feedback (FB)	3.5	3.9	4.3
Characteristics	3.5	3.9	4.1
Components	3.5	3.9	4.4
Methods	3.5	3.8	4.4

Figure 7. Application means by education level



Understanding and application ratings. In all cases, each innovator category rated themselves lower on application than understanding of concepts (see Table 11). The overall rating for understanding ranged from being able to explain the concept and use it in a familiar situation (Innovator and Early Majority categories) to being able to use the concept and draw connections to less familiar work situations. Overall ratings for application ranged from being able to carry out activity without assistance to combining multiple activities to meet new/unusual situations in work settings. In all cases, the level of understanding and the level of application after attending the NJAC preceptor program indicated that participants could at a minimum, apply the knowledge gained in the program in their work with new nurses in the work setting.

Table 11. Comparison of means for understanding and application

Concept	Innovator (N= 4)		Early Adopter (N= 20)		Early Majority (N= 8)	
	under	apply	under	apply	under	apply
Overall	3.4	3.3	4.1	4.0	3.7	3.4
Adult Learning (AL)	3.7	3.4	4.1	3.9	3.8	3.3
Learning style	3.5	3.0	4.2	3.8	4.0	3.3
Generation/culture	3.5	3.5	4.1	4.1	3.7	3.3
Motivation	4.0	3.8	4.1	4.0	3.6	3.4
Critical Thinking (CT)	3.1	3.1	3.9	3.9	3.7	3.6
Higher questioning	3.3	3.0	4.1	3.9	4.0	3.6
Pitfalls	3.0	3.3	3.9	3.8	3.7	3.6
Diagnose level of CT	3.0	3.0	3.8	3.9	3.4	3.6
Transition (TN)	3.3	3.3	4.1	4.0	3.8	3.3
Novice to expert	3.0	3.0	4.1	4.1	4.0	3.3
Reality shock	3.3	2.8	3.9	4.1	3.6	3.2
Challenges	3.8	4.0	4.3	4.0	3.9	3.3
Feedback (FB)	3.4	3.4	4.4	4.2	3.6	3.3
Characteristics	3.5	3.8	4.4	4.2	3.7	3.3
Components	3.5	3.3	4.4	4.2	3.4	3.3
Methods	3.3	3.3	4.4	4.2	3.6	3.2

Interview themes of benefits and challenges to application of key concepts by innovator category. Program benefits that impacted the preceptor's application of key concepts (adult learning, critical thinking, transition to professional, and providing feedback) were previously identified in research question two. These themes included using *program material*

as scaffolds and *introducing preceptor concepts to others* in the work setting. This qualitative data was examined to determine if program challenges to application of concepts in the work place differed based on individual innovativeness categories. In this case, all innovator categories found the *program material* as beneficial to applying the preceptor concepts in the workplace. Each category at a minimum used the booklet that contained guides for weekly and monthly meeting with preceptors to provide feedback and set goals. While the EM category maintained the use of materials to the booklet, both the EA and IN categories incorporated other materials (power point presentations, case scenarios, and videos) to work with their new nurse. An EA interviewee commented, “The website resources were very helpful in working with new nurse and other preceptors.”

Another theme that emerged as a program benefit to application of preceptor education concepts was the idea of *introducing preceptor concepts to others in the work setting*. Participants emphasized the importance of making other staff nurses and nurse leaders in the facility aware of the needs of the new nurse. In this case, the EM category did not mention working with other than their preceptors. However, both the IN and EA category interviewees noted instances of bringing concepts into the workplace and applying their education to train others. In most cases, this was to guide other nursing staff on how to effectively give constructive feedback to new nurses. They also passed along an understanding of the transition the new nurse experiences. Addressing the need to support new graduates based on their unique needs, one interviewee from the EA category offered, “Managers needed my assistance on some of those techniques as well. I haven’t kept that to myself. I spread it to the other staff so they have an understanding.”

When queried about the program's challenges or gaps in applying adult learning strategies, critical thinking, transition to practice, and feedback, two themes emerged: *Role conflict* and *Lack of Continued Support*. This qualitative data was examined to determine if program challenges to application of concepts in the work place differed based on individual innovativeness categories. In the case of *Role Conflict*, only the EA and EM categories expressed the issue of not having enough time to do their primary job and find time to meet and work with the new nurse. This issue crossed with the challenge of the *in-person class setting* noted in questions 1 and 3. Not only were some of the participants unable to apply the preceptor principles they gained from the education program; they also had to catch up on any reports, audits, or other tasks they were unable to do while in the class. The role conflict theme extended to include facility leaders and administrators who did not understand the breadth and responsibilities inherent in the preceptor role.

The second theme to emerge when examining program challenges to applying the preceptor role was a *lack of continued support* from the program. This challenge to applying preceptor concepts in the work setting was evidenced in all identified innovator categories.

Chapter 5: Discussion and Recommendations

The purpose of this mixed methods study was to identify gaps in an academic-based preceptor education program offered to long-term care facilities in New Jersey (NJAC preceptor education program). Through an online survey and individual interviews, preceptors who had participated in the NJAC preceptor education program reflected on to what extent and in what ways the program impacted their understanding of preceptor concepts (namely adult learning principles, critical thinking, reality shock/transition, and providing effective feedback), as well as their ability to effectively apply these concepts in the work setting. Informed by Rogers Diffusion of Innovation framework, quantitative data from the survey and qualitative data from the interviews were analyzed to determine if gaps in understanding of preceptor concepts or gaps in applying the concepts in the work setting differed by innovator category.

A discussion of the quantitative and qualitative results focuses on the NJAC preceptor education program (RQ 1 and 2), and the participants needs by innovator category (RQ 3 and 4). Based on these findings, recommendations for future preceptor education program revisions will be addressed, as well as indications for future studies. Study limitations are also discussed, along with conclusions regarding preceptor education programs for non-hospital settings.

Summary of Findings

Research Question 1: Understanding. Participants rated **Adult Learning** and **Providing Feedback** as areas where the education program had the most impact on their understanding. Data showed that respondents rated their understanding of adult learning and feedback as highest. Analysis of data from interviews with a stratified random sample of participants from all Innovator categories identified the theme, *use of discussion groups*, as a benefit to understanding the program concepts. Challenge or gap themes focused on the program

requirements perceived by the participants, namely, *amount of course material* and *in-person class* delivery.

Research Question 2: Application. Participants rated **Providing Feedback** the key area where the education program had the most impact on their application. Examining the demographic parameter of Level of Education and Job Position, it was found that participants with a master's level education scored highest in all application areas as compared with the sample means and other levels of education means. Qualitative data identified the *use of program materials as scaffolds* not only for the individual preceptor, but also as a means of *introducing preceptor concepts to others* in the work as benefits to applying course concepts. Challenge or gap themes focused on perceived roadblocks to implementing the preceptor role, including *role conflict* and *lack of continued support* on the part of the NJAC preceptor education program.

Research Question 3: Understanding by innovator category. Data analysis by individual innovator category indicated that the EA category had the highest means for understanding for all preceptor education concepts. The EAs rated feedback as the highest concept for understanding. This was also true for the IN category. The EM category rated adult learning as its highest concept for understanding. EA means were highest for all concepts. Examining the demographic parameter of Level of Education and Job Position, it was found that participants with a master's level education scored highest in all understanding areas as compared with the sample means and other levels of education means.

Analysis of data by innovator category from interviews with a stratified random sample of participants identified the *use of discussion groups* as a benefit to understanding program concepts for all innovator categories (IN, EA, and EM). Challenge or gap themes focused on the

program requirements perceived by the participants, namely, *amount of course material* for EA and EM categories (EA and EM interviews focused on the commute and interruption of the workflow class days) and *in-person class* delivery for all innovator categories. However, the IN category were the only individuals interviewed who suggested the use of technology to create an alternative to in person classes.

Research Question 4: Application by innovator category. Data analysis by individual innovator category indicated that the EA category had the highest means for application among all preceptor education concepts. This was similar to the understanding means obtained for RQ 3. EAs rated feedback as the highest concept for application. This was also true for the IN category. The EM category rated adult learning as its highest concept for application. Qualitative data identified the *use of program materials as scaffolds* (all innovator categories) not only for the individual preceptor, but also as a means of *introducing preceptor concepts to others* (EA and IN categories) in the work as benefits to applying course concepts. Challenge or gap themes focused on perceived roadblocks to implementing the preceptor role, including *role conflict* (EA and EM categories) and *lack of continued support* (all innovator categories) on the part of the NJAC preceptor education program.

Benefits to applying preceptor concepts. Program benefits that impacted the preceptor's application of key concepts (adult learning, critical thinking, transition to professional, and providing feedback) were previously identified in research question two. These themes included using *program material as scaffolds* and *introducing preceptor concepts to others* in the work setting. This qualitative data was examined to determine if program challenges to application of concepts in the work place differed based on individual innovativeness categories. In this case, all innovator categories found the *program material* as beneficial to applying the preceptor

concepts in the workplace. Each category at a minimum used the booklet that contained guides for weekly and monthly meeting with preceptors to provide feedback and set goals.

Another theme that emerged as a program benefit to application of preceptor education concepts was the idea of *introducing preceptor concepts to others in the work setting*.

Participants emphasized the importance of making other staff nurses and nurse leaders in the facility aware of the needs of the new nurse. In this case, the EM category did not mention working with others beyond their preceptors. However, both the IN and EA category interviewees noted instances of bringing concepts into the workplace and applying their education to train others. In most cases, this was to guide other nursing staff on how to effectively give constructive feedback to new nurses.

Challenges to applying preceptor concepts. When queried about the program's challenges or gaps in applying adult learning strategies, critical thinking, transition to practice, and feedback, two themes emerged: *Role conflict* and *Lack of Continued Support*. This qualitative data was examined to determine if program challenges to application of concepts in the work place differed based on individual innovativeness categories. In the case of *Role Conflict*, only the EA and EM categories expressed the issue of not having enough time to do their primary job and find time to meet and work with the new nurse. This issue crossed with the challenge of the *in person class setting* noted in questions 1 and 3.

The second theme to emerge when examining program challenges to applying the preceptor role was a *lack of continued support* from the program. This challenge to applying preceptor concepts in the work setting was evidenced in all identified innovator categories. A summary of key interview themes by understanding and application, as well as impact per innovator category can be found in Table 12.

Table 12. Summary of qualitative themes

	Understanding benefits	Understanding gaps		Application benefits		Application gaps	
	Group discussions	In-person class	Amount of course materials	Materials as scaffolds	Introducing preceptor concepts to others	Role conflict	Lack of post-program support
IN	✓	✓		✓	✓		✓
EA	✓	✓	✓	✓		✓	✓
EM	✓	✓	✓	✓		✓	✓
Sample	✓	✓	✓	✓	✓	✓	✓

It is interesting to note that while the all groups discussed themes as listed in the table above, the innovator category mentioned benefits more frequently than the other two categories. Innovator category members also mentioned gaps less frequently than the EA or EM categories. Conversely, the EM group mentioned gaps/challenges more frequently than the IN or EA groups. For statements describing understanding concepts, the IN category was responsible for 35% of the comments; EA had 33% of the comments; and EM had 29% of understanding comments. Statements describing examples of applying concepts in the work setting had IN contributing 49% of the comments; EA contributing 36%; and EM contributing the remainder. Statements describing benefits of the program included 50% by the IN category; 28% by the EA category; and 23% by the EM category. Statements describing gaps or challenges included 43% by the EM category; 22% by the EA category; and 9% by the IN category. Although the EA category posted the highest means for understanding and application, the IN category contributed the most comments that provided examples of how they manifested understanding and demonstrated application of key concepts.

These results are in keeping with Rogers (2003) description of the IN category as more amenable to taking risks and implementing innovations. The EAs, as thought leaders and

influencers in their environment, followed the IN in their description of benefits and ways that the program impacted their understanding and application of preceptor concepts in the work setting. Finally, the EM (described as pragmatists) were more cautious in their interviews. They discussed the challenges of understanding preceptor concepts and applying the role in the work place due to the conflict this new role presented when adding it to their current job. Challenges resonated with EM individuals regardless of their level of education or job title.

Evaluating the NJAC Preceptor Education Program

Participants gave higher rated levels of understanding and application from the TCPS to concepts that were more action-oriented (feedback) as they would be expected to demonstrate in the work setting (Foy et al., 2013). The lowest rated application component (transition) is more of an inner experience for the nurse residents to go through emotionally and is not easily recognized by the preceptor (Kang, Chiu, Lin, & Chang, 2016). A checklist cannot be applied for the preceptor to support the new nurse in this type of situation. Feedback is much easier to plan and apply in a situation where a new nurse completes an observable complex care procedure. For example, preceptors provide feedback based on observing the new nurse delivering physical care, and communicating with patients, colleagues, and physicians. Observation of these physical actions on the part of the new nurse is an objective activity with a clear indication of whether the actions are done correctly and merit positive feedback from the preceptor, or are not done correctly and merit constructive critique from the preceptor. The observability of a new nurse's caregiving and communication actions makes feedback less of a tenuous concept to apply in the work setting. Concepts such as new nurse transition to the professional role and their use of critical thinking and resolving conflict are less visible to the preceptor in the work setting and require more extensive communication and reflection with the

new nurse. A new nurse who is competently performing their clinical duties may be feeling overwhelmed or having conflicts with colleagues. These feelings are not as easily observed or assessed by the preceptor as the physical care.

Due to the action-oriented nature of feedback as a concept, it was addressed in the classroom through the incorporation of group discussions and case scenarios the reflected situations in the work setting. This raises the question whether feedback was rated higher for understanding and application due to the teaching strategies and because it is more practice-oriented (as opposed to a more theoretical concept such as transition), or a combination of the principles and activities (Bengtsson & Carlson, 2015). The ability to have *class discussion* with other participants was identified as a clear benefit as evidenced by interview data. Lower rated concepts (critical thinking, transition) were presented in the classroom with less discussion/case studies. While interviewees mentioned the need to encourage higher-level questions to increase the new graduate's critical thinking/reasoning, the types of higher-level questions were very dependent upon the clinical situation in the work setting. Program benefits to application included the use of *class material as scaffolds* as a benefit from the preceptor program. In particular the feedback booklet, which contained guidelines to conduct weekly and monthly meetings for feedback and goal setting, may have impacted the higher application rating for feedback. Therefore, the ability to "practice" in the classroom was difficult. Are the lower understanding ratings for the more theoretical concepts an indicator of a true lesser level of understanding after attending the NJAC preceptor education program, or were participants answering questions about understanding a concept based on the application required in the work setting? In addition, dealing with the conflict and reality shock of transition occurs after the new nurse has developed a level of confidence and competence in their clinical skills. Offering

education to preceptors about the concept of transition and conflict resolution at a time that coincides with them encountering it in the work setting creates a scenario where the preceptor can immediately apply what they have learned (Foy et al., 2013).

It was a challenge for interview participants to consider the understanding of a concept, without mentioning how that understanding would impact the application of the concept in the work setting. Other researchers have conducted preceptor education studies that show despite the preference for obtaining competence in an application based concept, preceptors also cite knowledge and understanding of the theoretical aspects as equally important in being a competent preceptor (Altmann, 2006; Bengtsson & Carlson, 2015).

Education and information on these more theoretical concepts is perhaps better received when the preceptor begins to encounter these situations with the new nurse (Foy et al., 2013). Education through discussion, and simulations at a time when the preceptor can apply it immediately in the work setting may provide the right education at the right time for the preceptor in their new role. Scheduling sessions at a time when the preceptor encounters these situations will enhance their understanding of concepts as they are occurring, as these concepts are now practical as opposed to “theoretical” in the preceptor’s experience (Chang et al., 2015; Kang et al., 2016).

The key theme that arose in discussing the participants’ understanding of all four concepts was the common notion of understanding the *unique needs of the new nurse* when planning teaching strategies, fostering critical thinking, supporting the new nurse in transition, and providing feedback to the new nurse. Each of these was important in determining the types of feedback and encouragement the new nurse needs from the preceptor (Sandau et al., 2011). However, this does not indicate gaps in understanding the other concepts (critical thinking and

transition). Rather, comments addressed the importance of considering the components of adult learning, feedback, and critical thinking as part of the preceptor's role to meet the needs of the new graduate who was transitioning from student to professional.

Interview participants were asked to identify program challenges that impacted their understanding of preceptor concepts. From this data, two themes emerged: identified program gaps in understanding included *program delivery* and a large *amount of materials* distributed. Application challenges focused on *role conflict* and the difficulty preceptors had in fitting the preceptor activities with their other job responsibilities, as well as *lack of support* after the program (Luhanga et al., 2010). Providing feedback for a task or skill performed by the new nurse was made more efficient with the use of a checklist. The clinical nature of this task also fit more easily into the daily routine of the preceptor, while working with the new nurse as they were delivering patient care. Assessments and conversations about how they were transitioning and what types of issues they were encountering could be interfering with the daily patient care routine, thus adding to the role conflict.

Influence of Individual Characteristics of the Preceptor

Research questions three and four sought to examine the role of individual characteristics of participants in determining the potential education program gaps and benefits for each preceptor. Participants in the EA category had higher scores in understanding and application for each of the four main preceptor concepts and their components than the means for the total sample, IN category, and EM category. Rogers has characterized the EA category as being the thought-leader and influencer in an organization who enjoys the support and respect of their colleagues (Rogers, 2003). This category the highest percentage of educators and nursing directors, as well as the being the only category with participants who served as preceptor for

more than 5 new nurses since completing the program. The IN category had no participants in the educator job role. A majority of the IN category had been in their position one to three years, and none had the opportunity to serve as preceptor for more than five new nurses since completing the program. The IN category did have participants who were in nurse leader roles as well as a master's prepared nurse. While this group is characterized as risk takers and innovators who are not necessarily integrated as a thought leader or resource to others in the system (Rogers, 2003). As a category, EMs are more pragmatic and deliberate in their actions (Rogers, 2003). It would stand to reason that the EA, as thought leader and influencer, would participate in the education program with the intent of grasping concepts to implement in the work setting, and serve as a resource of information to colleagues. While demographic diversity existed between the innovator categories, in education, job role, job longevity, and number of new nurses precepted, the EA group had a higher number of master's prepared nurses, as well as nurses who had precepted more than five new nurses since attending the preceptor education program. The understanding scores for master's prepared preceptors were higher than t preceptors with associates and bachelor's degrees. The EA group also had a higher number of nurse educators than the other two groups. Educators scored higher than preceptors in other jobs in their work settings.

Although the EA group rated their level of understanding higher than their EM or IN counterparts, it should be noted that master's prepared nurses scored higher on understanding in all concepts than their bachelors or associates colleagues. Are demographic factors (education, job, longevity, cohort attended) more indicative of differences in understanding means than innovator category (Parsons, 2007; Rogan, 2009; Smedley et al., 2010)?

Similar to the understanding ratings, the master's prepared nurses scored higher on all application concepts than their bachelors or associate degree colleagues. When isolated comparing other demographics, the preceptors in the educator and staff nurse roles also had higher scores than directors of nursing and administrators, possibly since these preceptors have the most contact with new nurses. Interview demographics distributed levels of education among the three innovator categories. Interview data provided merit to the idea that the education level or job position of the preceptor were not the defining criteria to employ as facilities select nurses to serve as preceptors. Challenges and benefits were not experienced the same by all master's prepared preceptors. The EM category identified *role conflict*, *amount of program materials*, and *lack of program support* as challenges despite have master's prepared nurses and educators as part of the interview group. The IN category did not identify these same challenges, and added the benefits of educating others in their settings. Interviews indicated that not all innovator groups shared common benefits and challenges after distribution of master's prepared and seasoned preceptors were equal. In this case participant perceptions of program benefits and challenges were identified by the individual's innovator category rather than their level of education.

The unique needs of individual innovator categories should be considered by nurse leaders responsible for selecting nurses to be trained as preceptors, or preceptor course faculty responsible for developing course curriculum and materials. Preceptor selection, usually predicated by level of education and job position, is a challenge in the non-hospital setting where the number of higher-educated nurses is less than hospital settings. The educator or nurse leader is usually considered to be the most appropriate person to take on the preceptor role in the non-hospital setting since the new nurse may be the only RN working with paraprofessionals (LPN or

nurse aides) on his or her unit. However, if this proposed preceptor is more risk averse or more reluctant to apply the role in the work setting, he or she may identify challenges in applying the concepts. A leader can set the tone in the facility that communicates the value of the preceptor role in transitioning the new nurse from student to professional. Support from the leadership in the facility can mitigate the role conflict experienced by the less innovative preceptor as they deal with the duties of their traditional job. The nurse leader can work with the preceptor to temporarily delegate the preceptor's job responsibilities to other colleagues so that the preceptor effectively applies all program concepts. In this way, the role conflict experienced by a less innovative preceptor may be decreased. Leaders can also foster the more innovative preceptor to share knowledge and information to others in the facility as a trainer. By setting the expectation that all staff play a role in the support of the new nurse, the nurse leader supports the importance of all staff understanding preceptor concepts.

The nurse faculty charged with developing and delivering a preceptor education program can benefit from understanding the innovator categories of his or her preceptor-learners. Purposeful inclusion of opportunities for participants to discuss and learn from each other was a benefit that all participants felt impacted their understanding of the preceptor concepts. Scaffolds with simple instructions and case studies directly related to the work setting can foster the application of preceptor concepts for the more pragmatic and risk-averse participant (Bergtsson & Carlson, 2015). The provision of supplemental materials with additional instruction to more innovative participants will better allow them to share information with others and sustain the preceptor role in their work setting. The use of classroom or online modules post-education will serve to provide a refresher for previous preceptors, support of the

preceptor as they continue in the role, or supplemental information for preceptors wishing to train and educate their colleagues.

Proposed NJAC Program Revisions

The purpose of this study was to evaluate the benefits and gaps of the NJAC preceptor program in order to determine the need for revision. Higher ratings for understanding and application were given to concepts that included group discussions, case scenarios, and other participative activities in class. As an adult learner, the preceptors sought and valued experiences that provided learning that could immediately be utilized in the work setting (Bengtsson & Carlson, 2015; Chang et al., 2015). Future offerings of the program will consider a curriculum that increases participative activities such as group discussions and information sharing to combine application with necessary theoretical knowledge (Altmann, 2006).

Some participants also saw an overabundance of written materials as a gap in the program. However, others appreciated the materials and used them to educate others. Perhaps materials used in the clinical setting can be more prescriptive and can be used with minimal planning, while other materials would still be available to those preceptors who use them as part of their daily job. The use of more prescriptive materials in the work setting may also decrease some of the role conflict preceptors saw in trying to implement preceptor activities while still maintaining their own job responsibilities. A clear delineation will be made between materials that can be used in dealing directly with the new nurse (feedback checklist, higher level questions to stimulate critical thinking and reflection), and supplemental materials to be used when educating other colleagues regarding the needs of the new nurse.

Class attendance was a challenge for preceptors who felt conflicted as they left work to attend the program. Perhaps some of the lower rated, more theoretical concepts (transition,

critical thinking) could be combined with the concepts that are more application-based (feedback) to shorten the duration of the program. Another consideration to decrease the role conflict brought about by class attendance would be the development of a hybrid program. The use of online modules developed as a professional development would make participating easier for preceptors as well their nurse colleagues (Blum, 2014; Parsons, 2007; Zahner et al., 2009). If asynchronous, the modules could be completed based on work schedule. Zahner et al. (2009) also used educational modules as a refresher for preceptors who had not precepted a new nurse in several months. Use of a hybrid model can also expand the capacity of preceptor education to include multiple participants from a single facility to sustain the preceptor role in the work setting.

Due to the fact that the NJAC preceptor education program was offered to multiple facilities, the participant demographics were more varied than the hospital setting preceptor program in which the preceptor is chosen based on more homogenous criteria (minimum bachelors prepared, at least three years' experience). For this reason, program design of the NJAC preceptor education program would benefit from considering the diversity of the participants, not only from a demographic perspective, but also from a risk-taking innovator category perspective.

Limitations

This study was not without limitations. These include population, sample size, self-reporting, and time between attendance at NJAC preceptor education program and participation in this study. The population was limited to participants from the four cohorts of the NJAC preceptor education program. As it is intended to examine the impact of this particular program, the ability to generalize the findings and recommendations to other preceptor education programs

may be limited. Although the survey response rate was 64% ($n=32$) it was still a relatively small sample size and may not be representative of the population (including preceptors who did not respond to invitations to join the study). It is possible that participants may have differed from those preceptors who chose not to participate. Although three innovator categories (innovator, early adopter, and early majority) are represented in the sample, there are no late majority or laggards. It is unknown if late majority or laggard individuals existed in the NJAC preceptor education program group, and had not opted to participate in the study. Another consequence of the small sample size was the relatively small size of the innovator category. Although the innovator group ($n=4$) comprised 12.5% of the study sample, the small sample size necessitated the shifting of several members of the EA group into the IN group in the qualitative interview process. Finally, due to the small sample size, quantitative data analysis was limited to counts and means.

Quantitative data was collected through an online survey consisting of demographics, Individual Innovativeness Scale, and a Training Course Perception Scale (TCPS). This method of self-reporting was not augmented by observation or other types of methodology that would provide an objective comparison for the data obtained through the survey. Qualitative interview questions were designed to gain a richer perspective of the survey data. In querying participants about their understanding and application survey ratings, a richer understanding of the NJAC preceptor program benefits and challenges were obtained. Data was collected based on innovator categories. However, demographic variables may confound the results found for innovator categories. Is the higher level of understanding or application gained from the NJAC preceptor education program a result of innovator category, or is the higher level more indicative of educational preparation?

The length of time between preceptor attendance of the NJAC preceptor education program and participation in the study poses another limitation of this study. The program conducted four cohorts for preceptor participants, with completion dates ranging from May 2015 for cohort one, to May 2017 for cohort four. Data collection for this study took place from November 2017 until February 2018. Study participants had completed the program from 6 months to 2 ½ years before participating in the study, raising the concern of their ability to recall details of the education program and its impact on their understanding and application of preceptor concepts. To address this limitation, each participant was provided with a “cheat sheet” that contained a table with the four preceptor concepts (adult learning strategies, critical thinking, transition from student to professional, and providing feedback) along with key activities or materials used for each. TCPS scores did not appear to be affected by the education cohort. Interview questions reinforced this. However, cohorts were not isolated in the data analysis.

Recommendations for Future Studies

Preceptors play a vital role in supporting and mentoring the new nurse as they transition from student to professional. Understanding the needs of the new nurse and having the skill set to meet these needs are necessary tools for the preceptor. Long-term care facilities lack the resources to provide this type of education and training for their preceptors. The NJAC preceptor education program was developed to address this need for long term care agencies in New Jersey. This study looked at the impact of the program on the participants and their level of understanding and application of preceptor concepts. Data from quantitative surveys and qualitative interviews suggest several recommendations to consider for future studies and for possible revisions to the preceptor education program.

The questions raised about the impact of education, job position, or seniority in the work setting suggest that future research is needed to examine the impact of demographic factors on the knowledge obtained in preceptor education programs and the application of this knowledge in the work setting (Rogan, 2009; Smedley et al., 2010). The small sample size made deeper analysis of this data difficult. It is suggested that a multi-site study be considered to increase the population and potentially increase the sample size. A larger sample size would allow for deeper analysis of the data. Results can be used to develop criteria and learning needs for future preceptors.

Feedback is a concept that is accepted as one of the tenets of the preceptor role. Isolating the concept of feedback to study its theory and application at a more granular level can lead to a shorter program that focuses on the most critical aspect of the role. This would decrease the conflict felt by the preceptor as they left work to attend education sessions and had work to make up upon their return to the clinical facility.

Education provided to preceptors able to share information and educate others in the workplace fosters sustainability of the preceptor role. Participants in leadership roles described how they used the program to create an awareness of the role of the preceptor in their work setting, as well as preparing others for the role. Examining the use of the NJAC preceptor education program as a train-the-trainer program would allow for curriculum development and teaching strategies that can be used to reach a larger segment of potential preceptors in long term care settings.

The findings for this study were based on preceptor self-reporting about their perceived level of understanding and ability to apply preceptor concepts in the work setting. Future studies are needed to observe preceptors in their work setting to better assess their level of application

and assist with identifying gaps in understanding or application that require additional education or training for the preceptor. NJAC preceptor education participants completed the program at different points, depending upon the cohort they attended. While some completed the program six months before participating in the study, others participated almost 30 months before the study. It is not known if their ratings of understanding and application were based on true recollection of a program attended almost three years prior. Some preceptors did not have the opportunity to precept new graduates on a consistent basis. Tsai et al. (2015) suggests having the preceptor complete an evaluation immediately after the education is completed for participants to have a clear recollection of the course. A longitudinal study that measures application, understanding, and program gaps over time may provide a clearer picture of actual benefits and gaps of the education program.

Conclusion

The health care industry is witnessing a shift in patient care to out of hospital settings. Patient populations are aging and there is an expressed need to have adequate numbers of competent staff to deal with the unique needs of this population. Nurses in long term care settings are also leaving the workforce through retirement, leaving a gap in the number of needed professionals. New graduates are entering a workplace that is lacking in educators and others who can help to guide them in their transition. The role of the preceptor is a key link to retaining this new graduate workforce, as well as assisting them to become independent and competent caregivers. Proper education and training is needed by preceptors as they must develop a way to pass on their knowledge and skills to the next generation of nurse educators and leaders.

The learning needs of preceptors vary based on individual characteristics (innovator category, level of education, and job title). One characteristic (e.g., level of education) is not the

sole explanation for the success or challenges encountered by a preceptor in applying the role in the work setting. Diverse needs may merit supplemental material and support based on these needs. The more pragmatic early majority category may require more scaffolds and success in practicing those scaffolds in the classroom setting to decrease the role conflict they feel when faced with addressing the new nurse's critical thinking skills. On the other hand, the innovator may benefit from additional scaffolds to train others in the preceptor role. The concepts that address the new nurse's internal thought processes (such as transition and reality shock, or how they think critically to solve problems) are necessary to understand for effective application of the preceptor role. However, more guidance is needed to apply these more tenuous concepts.

The effective application of the preceptor role is pivotal to the successful transition of the new nurse from student to professional. This requires the support and oversight of nursing leadership in the facility. Providing education and information to leaders in the long-term care setting is important to guide them in selecting the most appropriate member of the team to take on the responsibilities of the preceptor role. Based on the findings of this study, the leader needs to understand the nuances of the preceptor role to continue support for it. Education for the leader includes a review of preceptor concepts and actions applied in the work setting.

The field of education uses seasoned educators to serve as mentors for new teachers (VanGinkel, Oolbekkind, Meijer & Verloop, 2015). The transition from student to professional has certain common challenges, and preceptor principles can span several professions. A final consideration would be to extend the training and education in a collaborative manner with other disciplines and professions to insure there are adequate numbers of knowledgeable and competent professionals in all fields.

References

- Aaron, C. (2011). The positive impact of preceptors on recruitment and retention of RNs in long term care. *Journal of Gerontological Nursing*, 37(4), 48-54.
- Altmann, T. (2006). Preceptor selection, orientation, and evaluation in baccalaureate nursing education. *International Journal of Nursing Education and Scholarship*, 3(1), 1014-1030.
- Anderson, G., Hair, C., & Toder, C. (2012). Nurse residency programs: An evidence-based review of theory, process, and outcomes. *Journal of Professional Nursing*, 28(4), 203–212. <https://doi.org/10.1016/j.profnurs.2011.11.020>
- Andrews, V., Tonkin, E., Lancaster, D. & Kirk, M. (2013). Using the diffusion of innovation theory to understand the uptake of genetics in nursing practice: Identifying the characteristics of genetic nurse adopters. *Journal of Advanced Nursing*, 70(4), 878-893. <https://doi.org/10.1111/jan.12255>
- Ballem, P., Brownson, R., Haire-Joshu, D., Heath, G., & Kreuter, M. (2010). Dissemination of effective physical activity interventions: Are we applying the evidence? *Health Education Research*, 1–14. <https://doi.org/10.1093/her/cyq003>
- Bengtsson, M., & Carlson, E. (2015). Knowledge and skills needed to improve as preceptor: Development of a continuous professional development course- a qualitative study part 1. *BMC Nursing*, 14(51), 1-7. <https://doi.org/10.1186/s12912-015-0103-9>
- Benner, P. (1982). From novice to expert. *American Journal of Nursing*, 82(3), 402-407.
- Billay, D., & Myrick, F. (2008). Preceptorship: An integrative review of the literature. *Nurse Education in Practice*, 8, 258-266.
- Billay, D., & Yonge, O. (2004). Contributing to the theory development of preceptorship. *Nurse Education Today*, 24, 566-574.

- Blum, C. (2014). Evaluating preceptor perception of support using educational podcasts. *International Journal of Nursing Scholarship*, 11(1), 1-8. <https://doi.org/10.1515/ijnes-2013-0037>
- Blumberg, P. (2016). Factors that influence faculty adoption of learning-centered approaches. *Innovations in Higher Education*, 41, 303–315. <https://doi.org/10.1007/s10755-015-9346-3>
- Bourgault, A., Heath, J., Hooper, V., Sole, M., Waller, J., & NeSmith, E. (2014). Factors influencing critical care nurses' adoption of the AACN practice alert on verification of feeding tube placement. *American Journal of Critical Care*, 23(2), 134-144. <https://doi.org/10.4037/ajcc2014558>
- Boyer, S. (2008). Competence and innovation in preceptor development: Updating our programs. *Journal for Nurses in Staff Development*, 24(2), E1-E6.
- Carlson, E., & Bengtsson, M. (2014). The uniqueness of elderly care: Registered nurses' experience as preceptors during clinical practice in nursing homes and home-based care. *Nurse Education Today*, 34, 569-572. <https://doi.org/10.1016/j.nedt.2013.07.017>
- Carlson, E., & Bengtsson, M. (2015). Perceptions of preceptorship in clinical practice after completion of a continuous professional development course-qualitative study part II. *BMC Nursing*, 14(41), 1-7. <https://doi.org/10.1186/s12912-015-0092-8>
- Carlson, E., Wann-Hansson, C., & Pilhammar, E. (2009). Teaching during clinical practice: Strategies and techniques used by preceptors. *Nurse Education Today*, 29, 522-526.
- Cimiotti, J., Aiken, L., Sloane, D., & Wu, E. (2012). Nurse staffing, burnout and health care associated infection. *American Journal of Infection Control*, 40(6), 486-490.

Clement-O'Brien, K., Polit, D., & Fitzpatrick, J. (2011). Innovativeness of nurse leaders.

Journal of Nursing Management, 19, 431-438.

Chang, C., Lin, L., Chen, I., Kang, C., & Chang, W. (2015). Perceptions and experiences of nurse preceptors regarding their training courses: A mixed method study. *Nurse Education Today* 35(1), 220–26. <https://doi.org/10.1016/j.nedt.2014.08.002>

Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*.

Thousand Oaks, CA: Sage.

Chang, A., Douglas, M., Breen-Reid, K., Gueorguieva, V., & Fleming-Carroll, B. (2013).

Preceptors' perceptions of their role in a pediatric acute care setting. *The Journal of Continuing Education in Nursing* 44(5), 211–17. <https://doi.org/10.3928/00220124-20130315-81>

Chen, S., Brown, J., Groves, M., & Spezia, A. (2007). Baccalaureate education and American nursing homes: A survey of nursing schools. *Nurse Educator Today*, 27, 909-914.

Chen, Y., Hsu, L., & Hsieh, S. (2012). Clinical nurse preceptor teaching competencies:

Relationship to locus of control and self-directed learning. *Journal of Nursing Research*, 20(2), 142-150. <https://doi.org/10.1097/JNR.0b013e318254ea72>

Clark, C., & Springer, P. (2012). Nurse residents' first-hand accounts on transition to practice.

Nursing Outlook, 64 (4): E2–8. <https://doi.org/10.1016/j.outlook.2011.08.003>

Clipper, B., & Cherry, B. (2015). From transition shock to competent practice: Developing

preceptors to support new nurse transition. *Journal of Continuing Education in Nursing*, 46(10), 448-454. <https://doi.org/10.3928/00220124-20150918-02>

Colon-Emeric, C., Toles, M., Cary, M., Batchelor-Murphy, M., Yap, T., Song, Y., Hall, R.,

Anderson, A., Burd, A., & Anderson, R. (2016). Sustaining complex interventions in

- long-term care: A qualitative study of direct care staff and managers. *Implementation Science*, 11(94), 1–10. <https://doi.org/10.1186/s13012-016-0454-y>
- Dearing, J. (2009). Applying diffusion of innovation theory to intervention development. *Research on Social Work Practice*, 19(5), 503–518. <https://doi.org/10.1177/1049731509335569>
- DeWolfe, J., Laschinger, S., & Perkin, C. (2010). Preceptors' perspectives on recruitment, support, and retention of preceptors. *Journal of Nursing Education*, 49(4), 198-206. <https://doi.org/10.3928/0148434-20091217-06>
- Dillman, D., Smyth, J., & Christian, L. (2014). *Internet Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Approach*. Hoboken, NJ: John Wiley & Sons.
- Dingfelder, H., & Mandell, D. (2011). Bridging the research-to-practice gap in autism intervention: An application of diffusion of innovation theory. *Journal of Autism and Developmental Disorders*, 41, 597–609. <https://doi.org/10.1007/s10803-010-1081-0>
- Doyle, G., Garrett, B., & Currie, L. (2014). Integrating mobile devices into nursing curricula: Opportunities for implementation using Rogers' Diffusion of Innovation model. *Nurse Education Today*, 34, 775-782.
- Dyess, S., & Sherman, R. (2009). The first year of practice: new graduate nurses' transition and learning needs. *Journal of Continuing Education in Nursing*, 40(9), 403-410. <https://doi.org/10.3928/00220124-20090824-03>
- Forneris, S. & Peden-McAlpine, C. (2009). Creating context for critical thinking in practice: The role of the preceptor. *Journal of Advanced Nursing*, 65(8), 1715-1724. <https://doi.org/10.1111/j.1365-2648.2009.05031x>

- Foy, D., Carlson, M., & White, A. (2013). RN preceptor learning needs assessment. *Journal for Nurses in Professional Development*, 29(2), 64-69.
<https://doi.org/10.1097/NND.0b013e318287aa12>
- Giallonardo, L., Wong, C., & Iwasiw, C. (2010). Authentic leadership of preceptors: Predictor of new graduate nurses' work engagement and job satisfaction. *Journal of Nursing Management*, 18, 993-1003. <https://doi.org/10.1111/j.1365-2834.2010.00126x>
- Glanz, K., Rimer, B. K., & Viswanath, K. (2008). *Health Behavior and Health Education: Theory, Research, and Practice*. John Wiley & Sons.
- Goldsmith, R. (2011). The validity of a scale to measure global innovativeness. *The Journal of Applied Business Research*, 7(2), 89-97.
- Goode, A., Owen, N., Reeves, M., & Eakin, E. (n.d.). Translation from research to practice: Community dissemination of a telephone-delivered physical activity and dietary behavior change intervention. *American Journal of Health Promotion*, 26(4), 253–259.
<https://doi.org/10.4278/ajhp.100401-QUAL-99>
- Haggerty, C., Holloway, K., & Wilson, D. (2012). Entry to practice preceptor education and support: Could we do it better? *Nursing Praxis in New Zealand* 28(1), 30–39.
- Hallin, K., and Danielson, E. (2009). Being a preceptor for nursing students: Registered nurses' experiences before and after introduction of a preceptor model. *Journal of Advanced Nursing*, 65(1), 161-174. <https://doi.org/10.1111/j.1365-2648.2008.04855.x>
- Harting, J., Rutten, G., Rutten, S., & Kremers, S. (2009). A qualitative approach of the diffusion of innovations theory to examine determinants of guideline adherence among physical therapists. *Physical Therapy*, 89(3), 221–232.

- Harvath, T., Swafford, K., Smith, K., Miller, L., Volpin, M. ...& Young, H. (2008). Enhancing nursing leadership in long-term care. *Research in Gerontological Nursing* 1, (3), 187–96.
- Hautala, K., Saylor, C. & O’Leary-Kelley, C. (2007). Nurses’ perceptions of stress and support in the preceptor role. *Journal for Nurses in Staff Development* 23(2), 64–72.
- Henderson, A., & Eaton, E. (2013). Assisting nurses to facilitate student and new graduate learning in practice settings: What ‘support’ do nurses at the bedside need? *Nurse Education in Practice*, 13, 197–201. <https://doi.org/10.1016/j.nepr.2012.09.005>
- Hendricks, S., DeMeester, D., Stepheson, E., & Welch, J. (2016). Stakeholder perceptions, learning opportunities, and student outcomes in three clinical learning models. *Journal of Nursing Education* 55(5), 271–77. <https://doi.org/10.3928/01484834-20160414-06>
- Hurt, H., Joseph, K., & Cook, C. (1977). Scales for the measurement of innovativeness. *Human Communication Research*, 4(1), 58-65.
- Hu, Y., Chen, S., Chen, I, Shen, H., Lin, Y., & Chang, W. (2015). Evaluation of work stress, turnover intention, work experience, and satisfaction with preceptors of new graduate nurses using a 10-minute preceptor model. *Journal of Continuing Education in Nursing*, 46(6), 261-271. <https://doi.org/10.3928/00220124-20150518-02>
- Hyrkas, K., & Shoemaker, M. (2007). Changes in the preceptor role: Re-visiting preceptors’ perceptions of benefits, rewards, support and commitment to the role. *Journal of Advanced Nursing*, 60(5), 513-524.
- Institute of Medicine (IOM). (2010). *The future of nursing: Leading change, advancing health*. Retrieved from http://books.nap.edu/openbook.php?record_id=12956&page=R1

- Jackson, K., and Trochim, W. (2002). Concept mapping as an alternative approach for the analysis of open-ended survey responses. *Organizational Research Methods*, 5(4), 307-336.
- Jordan, C., Doherty, W., Jones-Webb, R., Cook, N., Dubrow, G., & Mendenhall, T. (2012). Competency-based faculty development in community-engaged scholarship: A diffusion of innovations approach. *Journal of Higher Education Outreach and Engagement*, 16(1), 65-95.
- Kalischuk, R., Vandenberg, H., & Awosoga, O. (2013). Nursing preceptors speak out: An empirical study. *Journal of Professional Nursing*, 29(1), 30–38.
<https://doi.org/10.1016/j.profnurs.2012.04.008>
- Kang, C., Chiu, H., Lin, Y., & Chang, W. (2016). Development of a situational initiation training program for preceptors to retain new graduate nurses: Process and initial outcomes. *Nurse Education Today*, 37, 75-82.
<https://doi.org/10.1016/j.nedt.2015.11.022>
- Kilmon, C., & Fagan, M. (2007). Course management software adoption: A diffusion of innovations perspective. *Campus-Wide Information Systems*, 24(2), 134–144.
<https://doi.org/10.1108/10650740710742736>
- Kim, H. (2007). Clinical competence among senior nursing students after their preceptorship experiences. *Journal of Professional Nursing*, 23(6), 369–375.
<https://doi.org/10.1016/j.profnurs.2007.01.019>
- Lee, Y., Lin, H., Tseng, H., Tsai, Y., & Lee-Hsieh, J. (2017). Using training needs assessment to develop a nurse preceptor-centered training program. *Journal of Continuing Education in Nursing*, 48(5), 220-229.

- Lee-Hsieh, J., O'Brien, A., Liu, C., Cheng, S., Lee, Y., & Kao, Y. (2016). The development and validation of the Clinical Teaching Behavior Inventory (CTBI-23): Nurse preceptors' and new graduate nurses' perceptions of precepting. *Nurse Education Today*, 38, 107-114.
- Lillibridge, J. (2007). Using clinical nurses as preceptors to teach leadership and management to senior nursing students: A qualitative descriptive study. *Nurse Education in Practice*, 7(1), 44-52.
- Luhanga, F., Dickieson, P., & Mossey, S. (2010). Preceptor preparation: An investment in the future generation of nurses. *International Journal of Nursing Education Scholarship*, 7(1), 1-18.
- Luhanga, F., Billay, D., Grundy, Q., Myrick, F., & Yonge, O. (2010). The one-to-one relationship: Is it really key to an effective preceptorship experience? A review of the literature. *International Journal of Nursing Education Scholarship*, 7(1), 1-15.
- Martensson, G, Engstrom, M., Mamhidir, A., & Kristofferzon, M. (2013). What are the structural conditions of importance to preceptors' performance? *Nurse Education Today*, 33, 444-449.
- Marensen, G., Lofmark, A., Mamhidir, A., & Skytt, B. (2016). Preceptors' reflections on their educational role before and after a preceptor preparation course: A prospective qualitative study. *Nurse Education in Practice*, 19, 1-6. <https://doi.org/10.1016/j.nepr.2016.03.011>
- Martin, K., Buelow, S., & Hoffman, J. (2015). New teacher inductions. Support that impacts beginning middle level educators. *Middle School Journal*, 47(1), 4-12.
- Mukamel, D., Spector, W., & Limcangco, R, et al. (2009). The costs of turnover in nursing homes. *Medical Care*, 47(10), 1039-1045.

- Murray, C. (2009). Diffusion of innovation theory: A bridge for the research-practice gap in counseling. *Journal of Counseling and Development*, 87, 108–116.
- Nielsen, A., Lasater, K., & Stock, N. (2016). A framework to support preceptors' evaluation and development of new nurses' clinical judgment. *Nurse Education in Practice*, 19, 84-90. <https://doi.org/10.1016/j.nepr.2016.03.012>
- Newton, J. M., Billett, S., Jolly, B., & Ockerby, C. M. (2009). Lost in translation: Barriers to learning in health professional clinical education. *Learning in Health and Social Care*, 8(4), 315-327.
- Oldenburg, B., & Glanz, K. (n.d.). Diffusion of Innovations. In *Health Behavior and Health Education*.
- Omer, T., Suliman, W., & Moofa, S. (2016). Roles and responsibilities of nurse preceptors: Perception of preceptors and preceptees. *Nurse Education in Practice*, 16, 54-59. <https://doi.org/10.1016/j.nepr.2015.07.005>
- Pallister, J., & Foxall, G. (1998). Psychometric properties of the Hurt-Joseph-Cook scales for the measurement of innovativeness. *Technovation*, 18(1), 663-675.
- Parsons, R. (2007). Improving preceptor self-efficacy using an online educational program. *International Journal of Nursing Education Scholarship*, 4(1), 1-17.
- Panzavecchia, L., & Pearce, R. (2014). Are preceptors adequately prepared for their role in supporting newly qualified staff? *Nurse Education Today*, 34, 1119-1124. <https://doi.org/10.1016/nedt.2014.03.001>
- Pittman, P., Horton, K., Terry, M., & Bass, E. (2014). Residency programs for home health and hospice nurses: Prevalence, barriers, and potential policy responses. *Home Health Care Management and Practice* 26(2), 86–91. <https://doi.org/10.1177/1084822313511457>

- Phillips, J., & Vinten, S. (2010). Why clinical nurse educators adopt innovative teaching strategies: A pilot study. *Nursing Education Perspectives*, 31(4), 226–229.
- Porter, W., & Graham, C. (2016). Institutional drivers and barriers to faculty adoption of blended learning in higher education. *British Journal of Educational Technology*, 47(4), 748–762.
<https://doi.org/10.1111/bjet.12269>
- Poynton, M., Madden, C., Bowers, R., Keefe, M., & Peery, L. (2007). Nurse residency program implementation: The Utah experience. *Journal of Healthcare Management*, 52(6), 385–397.
- Richards, J., & Bowles, C. (2012). The meaning of being a primary nurse preceptor for newly graduated nurses. *Journal for Nurses in Staff Development*, 28(5), 208–213.
<https://doi.org/10.1097/NND.0b013e318269fde8>
- Rogan, E. (2009). Preparation of nurses who precept baccalaureate nursing students: A descriptive study. *Journal of Continuing Education in Nursing* 40(12), 565–70.
<https://doi.org/10.3928/00220124-20091119-06>
- Rogers, E. (2003). *Diffusion of Innovations*, 5th ed. New York, NY: Simon & Schuster, Inc.
- Rush, K., Adamack, M., Gordon, J., Lilly, M., & Janke, R. (2013). Best practices of formal new graduate nurse transition programs: An integrative review. *International Journal of Nursing Studies* 50, 345–56. <https://doi.org/10.1016/j.ijnurstu.2012.06.009>
- Saarikoski, M., & Leino-Kilpi, H. (2002). The clinical learning environment and supervision by staff nurses: Developing the instrument. *International Journal of Nursing Studies*, 39, 259–276.
- Sandau, K., Cheng, G., Pan, Z., Gaillard, P., & Hammer, L. (2011). Effect of a preceptor education workshop: Part 1. Quantitative results of a hospital-wide study. *The Journal of*

- Continuing Education in Nursing* 42(3), 117–26. <https://doi.org/10.3928/00220124-20101101-01>
- Shinners, J., & Franqueiro, T. (2015). Preceptor skills and characteristics: Considerations for preceptor education. *The Journal of Continuing Education in Nursing* 46(5), 233–36. <https://doi.org/10.3928/00220124-20150420-04>
- Silvestre, J., Bowers, B., & Gaard, S. (2015). Improving the quality of long-term care. *Journal of Nursing Regulation*, 6(2), 52-56.
- Smedley, A., Morey, P., & Race, P. (2010). Enhancing the knowledge, attitudes, and skills of preceptors: An Australian perspective. *Journal of Continuing Education in Nursing*, 41(10), 451-461. <https://doi.org/10.3928/00220124-20100601-08>
- Spector, N., Blegen, M., Silvestre, J., Bernsteiner, J., Lynn, M., & Ulrich, B. (2015). Transition to practice in nonhospital settings. *Journal of Nursing Regulation*, 6(1), 4-13.
- Starkweather, A., & Kardong-Edgren, S. (2008). Diffusion of innovation: Embedding simulation into nursing curricula. *International Journal of Nursing Education Scholarship*, 5(1), 1-11. <https://doi.org/10.2202/1548-923X.1567>
- Sung, S., Cho, D., & Choi. (2011). Who initiates and who implements? A multi-stage, multi-agent model of organizational innovation. *Journal of Management and Organization*, 17(3), 344–363.
- Thompson, B., Schneider, V., Haidet, P., Perkowski, L., & Richards, B. (2007). Factors influencing implementation of team based learning in health sciences education. *Academic Medicine*, 82(10), s53–s56.

- Tsai, Y., Hsieh, J., Turton, M., Li, S., Tseng, H., Lin, H., & Lin, H. (2014). Nurse preceptor training needs assessment: Views of preceptors and new graduate nurses. *Journal of Continuing Education in Nursing, 45*(11), 497-505.
- Tummers, L., Groneveld, S., & Lankhaar, M. (2013). Why do nurses intend to leave their organization? A large-scale analysis in long-term care. *Journal of Advanced Nursing, 69*(12), 2826-2838. <https://doi.org/10.1111/jan.12249>
- Turner, K., Nicholson, J., & Sanders, M. (2011). The role of nurse practitioner self-efficacy, training, program and workplace factors on the implementation of an evidence-based parenting intervention in primary care. *Journal of Primary Prevention, 32*, 95–112. <https://doi.org/10.1007/s10935-011-0240-1>
- Udlis, K. (2008). Preceptorship in undergraduate nursing education: An integrative review. *Journal of Nursing Education, 47*(1), 20-29.
- Ulrich, B. (2012). *Mastering Precepting: A Nurse's Handbook for Success*. Indianapolis, IN: Sigma Theta Tau International.
- VanGinkel, G., Oolbekkind, H., Meijer, P., & Verloop, N. (2015). Adopting mentoring to individual differences in novice teacher learning: The mentor's viewpoint. *Teachers and teaching, 22*(2), 198-218.
- Van Horne, S., Russell, J., & Schuh, K. (2016). The adoption of mark-up tools in an interactive e-textbook reader. *Educational Tech Research Development, 64*, 407–433. <https://doi.org/10.1007/s11423-016-9425-x>
- Varley, L., MacNamara, C., & Mannix-McNamara, P. (2012). Preceptorship: Exploring the experiences of final year student nurses in acute hospital setting. *Journal of Hospital Administration, 1*(2), 42-53.

- Wilson, R., Acuna, M., Ast, M., & Bodas, E. (2013). Evaluation of the effectiveness of simulation for preceptor preparation. *Journal for Nurses in Professional Development*, 29(4), 186-190. <https://doi.org/10.1097/NND.0b013e31829aec2e>
- Wink, D., & Ruland, J. (2016). Multiagency online preceptor education: Design, implementation, and outcomes. *Nurse Educator*, 41(5), 270-273.
- Wisdom, J., Chor, K., Hoagwood, K., & Horwitz, s. (2014). Innovation adoption: A review of theories and constructs. *Administrative Policy of Mental Health*, 41, 480–502. <https://doi.org/10.1007/s10488-013-0486-4>
- Yi, M., Fiedler, K., & Park, J. (2006). Understanding the role of individual innovativeness in the acceptance of IT-based innovations: Comparative analyses of models and measures. *Decision Sciences*, 37(3), 393-426.
- Zahner, S., Tipple, S., Rather, M., & Schendzielos, C. (2009). Supporting nurse preceptors through online continuing education. *Journal of Continuing Education in Nursing*, 40(10), 468-474. <https://doi.org/10.3928/00220124-20090923-01>
- Zinmeister, L., & Schafer, D. (2009). The exploration of the lived experience of the graduate nurse making the transition to registered nurse during the first year of practice. *Journal for Nurses in Professional Development*, 25(10), 28-34.

Appendix A: Timeline for Study**Total time for data collection/analysis: three months (November 2017-February 2018)**

Solicitation of preceptor via email/flyer	week 1
Survey open for completion	week 1- week 9
Reminder email to preceptors	week 2-9
Collect and analyze survey data	week 9-week 10
Contact interested interview participants (as indicated by survey)	week 10
Conduct interviews	week 10-week 12
Collect and analyze interview data	week 12-week 13
Compare survey and interview data	week 13-14
Report results of research questions	week 14-15

Appendix B: Online Survey

Informed Consent Form

Title: Preceptor Education Program Impact on the Implementation of the Preceptor Role

Evaluation of the Preceptorship Program: Questionnaire for Preceptors

You are invited to complete the survey titled: Evaluation of the Preceptorship Program: Questionnaire for Preceptors that is being conducted by Nancy Bohnarczyk, doctoral student at the Graduate School of Education, Rutgers University. I am conducting a study on how Preceptors who have participated in the NJAC preceptor education program perceive the program's impact on their ability to apply the knowledge and concepts from the program in the clinical setting.

What Will Be Done?

You are being asked to volunteer to take this survey. It will take approximately 15-20 minutes total. Please follow the instructions on the survey. The survey includes questions about your level of education; years of experience in your current position; your perceptions about the preceptor sessions and how effective the program was in providing you with the necessary knowledge and resources to apply the preceptor concepts effectively in the clinical setting; and questions regarding your comfort in taking on risks and adopting to change. Participation in this study is voluntary. The only alternative to this study is not to participate.

Risks or Discomforts:

There are no foreseeable risks to participate in this study. If you feel uncomfortable with a question, you can skip that question or withdraw from the study altogether.

Benefits:

There are no direct benefits to you for participating in this study. You will help provide data that may produce valuable information to help ensure a better work environment in long term care facilities.

Confidentiality

This research study is confidential. Your name will not be attached to the results of this survey. The research records will include some information about you such as education level, role, and work employment history such as length of service, but any reporting of the results will include pseudonyms and other efforts to mask any identifying information. We will know your personalized survey link when you respond to the online survey, however, we will not know your name or any of the information we collected about you that will be linked when reporting results. Once data collection and publication is complete, your linkage to the data will be destroyed and no link between the data and your identity will exist. There are no foreseeable risks to participation except for the remote possibility that your IP address/ personalized survey link would be inadvertently disclosed. However, the principal investigator has put in place adequate protections for your privacy in that all information provided will be kept confidential by using a number code. This code will be kept securely by the research team only until the study is completed in December 2018. This information will remain confidential by limiting

access to the research data and keeping it secure in a password protected flash drive. The Institutional Review Board at Rutgers University and those engaged in analysis will be the only parties allowed to see the data, except as required by law. If a report of this study is published, or the results are presented at a professional conference all identifying information will be removed before publication. All study data will be kept until completion of the study, December 2018.

Compensation:

There will be no compensation for completing this survey.

Withdrawal:

Your participation is voluntary; you are free to withdraw your participation from this study at any time. If you do not want to continue, you can simply leave this website. If you choose to skip any question that you do not wish to answer you may also do so.

How the Findings Will Be Used:

The results of the study will be used to determine if the NJAC preceptor education program is effective at providing preceptors with the knowledge and resources to apply the concepts of the preceptor role in the clinical setting. The results from this study will be presented back in aggregate format. The results may also be published in a peer reviewed journal.

Contact Information

If you have concerns or questions about this research study, please contact Nancy Bohnarczyk at Nancy.bohnarczyk@rutgers.edu, or 973-353-2708

If you have questions about your rights as a research subject contact the IRB Director:

Institutional Review Board

Rutgers University, the State University of New Jersey
Liberty Plaza/ Suite 3200
335 George Street, 3rd floor
New Brunswick, NJ 08901
Phone: 732-235-2866
Email: humansubjects@orsp.rutgers.edu

“This informed consent form was approved by the Rutgers University Institutional Review Board for the Protection of Human Subjects on August 19, 2017; approval of this form expires on August 18, 2018.” By beginning this survey, you acknowledge that you have read this information and agree to participate in this research, with the knowledge that you are free to withdraw.

☐ Yes, I am interested in providing input to the effectiveness of the preceptor program and agree to participate

☐ No, I am not interested in providing input into the effectiveness of the preceptor program and will not participate.

Main Survey

Thank you for agreeing to participate. Let's begin.

Demographics

Q3 What is your highest level of education?

- Associates degree
- Bachelor's degree
- Master's degree
- Doctoral degree

Q4 What is your current position in your facility?

- staff nurse
- charge nurse
- nurse educator
- assistant nurse manager
- nurse manager
- director of nursing
- nurse practitioner
- other _____

Q5 How many years in your current position?

- less than 1 year
- 1 to 3 years
- 4 to 6 years
- 6 to 10 years
- more than 10 years

Q5 How many years in your current position?

- less than 1 year
- 1 to 3 years
- 4 to 6 years
- 6 to 10 years
- more than 10 years

Q6 Which preceptor program did you attend?

- cohort 1 (end date April 2015)
- cohort 2 (end date November 2015)
- cohort 3 (end date December 2016)
- cohort 4 (end date May 2017)

Q7 How many new nurses have you served as a preceptor for since completing the program?

- zero
- 1 to 2
- 3 to 5
- more than 5

Q9 Measure of Innovativeness Scale Directions: People respond to their environment in different ways. The statements below refer to some of the ways people can respond. Please indicate the degree to which each statement applies to you by marking whether you: **Strongly Disagree = 1; Disagree = 2; Neither agree nor disagree =3; Agree= 4; Strongly agree = 5.**

	1 = Strongly Disagree	2 = Disagree	3 = Neither Agree nor Disagree	4 = Agree	5 = Strongly Agree
My peers often ask me for advice or information	•	•	•	•	•
I enjoy trying new ideas	•	•	•	•	•
I seek out new ways to do things	•	•	•	•	•
I am generally cautious about accepting new ideas	•	•	•	•	•
I frequently improvise methods for solving a problem when an answer is not apparent	•	•	•	•	•
I am suspicious of new inventions and new ways of thinking	•	•	•	•	•
I rarely trust new ideas until I can see whether the vast majority of people around me accept them	•	•	•	•	•
I feel that I am an influential member of my peer group	•	•	•	•	•
I consider myself to be creative and original in my thinking and behavior	•	•	•	•	•

	1 = Strongly Disagree	2 = Disagree	3 = Neither Agree nor Disagree	4 = Agree	5 = Strongly Agree
I am aware that I am usually one of the last people in my group to accept something new	•	•	•	•	•
I am an inventive kind of person	•	•	•	•	•
I enjoy taking part in the leadership responsibilities of the group I belong to	•	•	•	•	•
I am reluctant about adopting new ways of doing things until I see them working for people around me	•	•	•	•	•
I find it stimulating to be original in my thinking and behavior	•	•	•	•	•
I tend to feel that the old way of living and doing things is the best way	•	•	•	•	•
I am challenged by ambiguities and unsolved problems	•	•	•	•	•
I must see other people using new innovations before I will consider them	•	•	•	•	•
I am receptive to new ideas	•	•	•	•	•
I am challenged by unanswered questions	•	•	•	•	•
I often find myself skeptical of new ideas	•	•	•	•	•

Q10 Evaluation of NJAC preceptor education program.

Please reflect on your participation in the preceptor education program- in particular the topics covered in the first day including adult learning, critical thinking, transition to practice, and feedback. In the first section, indicate how participation in the program has impacted your **understanding** of each of the preceptor topics and accompanying content listed in the far left.

In the second section, indicate how participation in the program has impacted your **ability to apply** these preceptor topics and accompanying content with new nurses in the work setting.

Level of understanding:

Indicate how participation in the program has impacted your understanding of each of the preceptor topics and accompanying content listed in the far left.

As a result of participating in the preceptor education program, I now **understand** this concept at the level of being able to [choose the highest level that describes your knowledge of each concept]:

0 = I do not understand the concept at all or very minimally

1 = I can recall and describe the preceptor concept

2 = I can describe and explain the preceptor concept

3 = I can explain the concept and use it in a familiar work situation

4 = I can use the concept and draw connections to a less familiar work situation

5 = I can draw connections to the work situation and use the concept to critique or alter decisions

I make

	0 = I do not understand the concept at all or minimally	1 = I can recall and describe the preceptor concept	2 = I can describe and explain the preceptor concept	3 = I can explain concept and use in a familiar work situation	4 = I can use concept and draw connections to a less familiar work situation	5 = I can draw connections to the work situation and use the concept to critique or alter the decisions I make
Adult Learning: teaching strategies based on learning style	•	•	•	•	•	•
Adult Learning: address generational, cultural differences	•	•	•	•	•	•
Adult Learning: identify factors that motivate learning	•	•	•	•	•	•
Critical Thinking: strategies to stimulate higher level questioning	•	•	•	•	•	•
Critical Thinking: pitfalls to critical thinking	•	•	•	•	•	•
Critical Thinking: diagnosing level of critical thinking	•	•	•	•	•	•
Transition: novice to expert levels of competency	•	•	•	•	•	•
Transition: phases of transition and ways to overcome reality shock	•	•	•	•	•	•

	0 = I do not understand the concept at all or minimally	1 = I can recall and describe the preceptor concept	2 = I can describe and explain the preceptor concept	3 = I can explain concept and use in a familiar work situation	4 = I can use concept and draw connections to a less familiar work situation	5 = I can draw connections to the work situation and use the concept to critique or alter the decisions I make
Transition: identify challenges and assist with solutions	•	•	•	•	•	•
Providing feedback: characteristics of feedback	•	•	•	•	•	•
Providing feedback: components of feedback	•	•	•	•	•	•
Providing feedback: methods of providing feedback	•	•	•	•	•	•

Q12 Level of application:

Indicate how participation in the program has impacted your **ability to apply** these preceptor topics and accompanying content with new nurses in the work setting.

As a result of participating in the preceptor education program, I now can **apply** this concept at the level of being able to [choose the highest level that describes your **ability to apply** each concept]:

0 = I cannot repeat or mimic the activities, and cannot apply to any situations

1 = I can repeat or mimic the activities that were covered in the class, but cannot apply to a situation

2 = I can carry out an activity in a situation with written or verbal instruction

3 = I can perform the activity without assistance via written or verbal instruction

4 = I can combine multiple activities to meet a new or unusual situation in the clinical setting

5 = I can design my own activities to meet new or unusual situations

	0 = I cannot repeat or mimic the activities, and cannot apply to any situations	1 = I can repeat or mimic the activities that were covered in the class, but cannot apply to a situation	2 = I can carry out an activity in a situation with written or verbal instruction	3 = I can carry out an activity without assistance via written or verbal instruction	4 = I can combine multiple activities to meet a new or unusual situation in the clinical setting	5 = I can design my own activities to meet new or unusual situations
Adult Learning: teaching strategies based on learning style	•	•	•	•	•	•
Adult Learning: address generational, cultural differences	•	•	•	•	•	•
Adult Learning: identify factors that motivate learning	•	•	•	•	•	•
Critical Thinking: strategies to stimulate higher level questioning	•	•	•	•	•	•
Critical Thinking: pitfalls to critical thinking	•	•	•	•	•	•
Critical Thinking: diagnosing level of critical thinking	•	•	•	•	•	•
Transition: novice to expert levels of competency	•	•	•	•	•	•
Transition: phases of transition and ways to overcome reality shock	•	•	•	•	•	•

	0 = I cannot repeat or mimic the activities, and cannot apply to any situations	1 = I can repeat or mimic the activities that were covered in the class, but cannot apply to a situation	2 = I can carry out an activity in a situation with written or verbal instruction	3 = I can carry out an activity without assistance via written or verbal instruction	4 = I can combine multiple activities to meet a new or unusual situation in the clinical setting	5 = I can design my own activities to meet new or unusual situations
Transition: identify challenges and assist with solutions	•	•	•	•	•	•
Providing feedback: characteristics of feedback	•	•	•	•	•	•
Providing feedback: components of feedback	•	•	•	•	•	•
Providing feedback: methods of providing feedback	•	•	•	•	•	•

Q13 Thank you for responding to this survey. If you opted to participate, your results will be recorded. If you have any questions or concerns, please do not hesitate to contact me at nancy.bohnarczyk@gse.rutgers.edu

Appendix C: Resource List of Concepts/Activities for Survey and Interview

Concept	Activities
Adult Learning- Unique needs of the adult learner	Learning style inventory Generational, cultural differences Learning motivation survey
Critical Thinking- promote critical thinking in the new grad	Higher level questioning Reflection on blocks to critical thinking Diagnosing level of critical thinking
Reality Shock/Transition- support the new graduate through the transition from student to professional	Discussion of novice to expert steps Phases of transition Group work to identify challenges to practice
Feedback- providing constructive feedback to new graduate	BEERS form Case scenarios Role play

Appendix D: Interview Protocol

- I. Introduction of interview purpose: “As a participant in the NJAC Preceptor Education program, we are seeking your input to assist us in making revisions and modifications to the preceptor education program to make the content, teaching strategies, and resources easier to apply in the work setting. Your honest feedback regarding benefits you experienced in the program as well as challenges you experienced in applying what you learned will be used in revising the program.”
- II. Informed consent: Please take a few minutes to read the consent form. By signing this form, you consent to taking part in this interview and having your comments added to the data for this study. The second part of this consent seeks your permission for audio recording this interview. You will not be identified by name in this interview. I will be happy to answer any questions you may have about this informed consent. (Attachment 4)
- III. Ground rules
 - a. Confidentiality results will not be reported or linked to you as an individual.
 - b. Ability to stop, pause, or not answer any questions that you might feel uncomfortable about
- IV. Introductory question:
 - a. Opening question: How would you describe your experience in as a participant in the NJAC preceptor education program?
 - i. Probing questions:
 1. Can you tell me more about how you were able to implement the content of the various sessions (Adult Learner; Feedback; Promoting Critical Thinking, Reality Shock/Role Transition)
 2. Could you please explain
- V. First follow-up question: Adult learner Topic
 1. Can you tell me about your understanding of developing teaching strategies based on **learning style** of the new nurse?
 2. Can you tell me about your experience in applying teaching strategies based on the new nurse’s **learning style**?
 - ii. Probing questions:
 1. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to your understanding of **learning styles**?
 2. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to applying this in the work setting?
 3. You rated your understanding “X” on the online survey. Based on this score, what content, resources, or activities employed in using teaching strategies based on the new nurse’s learning style would you improve, add or delete?
 4. You rated your application “X” on the online survey. Based on this score, what content, resources, or activities employed in using teaching strategies based on the new nurse’s learning style would you improve, add or delete?

3. Can you tell me about your understanding of addressing **generational and cultural differences** of the new nurse?

4. Can you tell me about your experience in addressing **generational and cultural differences** of the new nurse?

iii. Probing questions:

1. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to your understanding of **generational and cultural differences**?
2. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to applying **generational or cultural differences** in the work setting?
3. You rated your learning “X” on the online survey. Based on this score, what content, resources, or activities employed in the adult learner session would you improve, add or delete?
4. You rated your learning “X” on the online survey. Based on this score, what content, resources, or activities employed in the adult learner session would you improve, add or delete?
- 5.

5. Can you tell me about your understanding of addressing factors that **motivate learning** new nurse?

6. Can you tell me about your experience in addressing factors that **motivate learning** in the new nurse?

iv. Probing questions:

1. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to your understanding of factors that **motivate learning**?
2. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to applying factors that **motivate learning** in the work setting?
3. You rated your learning “X” on the online survey. Based on this score, what content, resources, or activities employed in **motivating learning** would you improve, add or delete?
4. You rated your learning “X” on the online survey. Based on this score, what content, resources, or activities employed in **motivating learning** would you improve, add or delete?

VI. Second follow-up question: Critical thinking

1. Can you tell me about your understanding of strategies to stimulate **higher level questioning** for the new nurse?

2. Can you tell me about your experience in applying **higher level questioning** for the new nurse?

v. Probing questions:

1. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to your understanding of strategies to stimulate **higher level questioning**?

2. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to applying strategies to stimulate **higher level questioning** in the work setting?
3. You rated your understanding “X” on the online survey. Based on this score, what content, resources, or activities employed in strategies to stimulate **higher level questioning** would you improve, add or delete?
4. You rated your application “X” on the online survey. Based on this score, what content, resources, or activities employed in strategies to stimulate **higher level questioning** would you improve, add or delete?

3. Can you tell me about your understanding of **pitfalls to critical thinking** in the new nurse?

4. Can you tell me about your experience in addressing **pitfalls to critical thinking** in the new nurse?

vi. Probing questions:

1. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to your understanding of **pitfalls to critical thinking**?
2. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to applying **pitfalls to critical thinking** in the work setting?
3. You rated your learning “X” on the online survey. Based on this score, what content, resources, or activities employed in **pitfalls to critical thinking** would you improve, add or delete?
4. You rated your learning “X” on the online survey. Based on this score, what content, resources, or activities employed in **pitfalls to critical thinking** would you improve, add or delete?

5. Can you tell me about your understanding of **diagnosing level of critical thinking** in the new nurse?

6. Can you tell me about your experience in addressing **diagnosing the level of critical thinking** in the new nurse?

vii. Probing questions:

1. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to your understanding of **diagnosing the level of critical thinking** in the new nurse?
2. Can you give a specific content, materials, or activity(ies) in this session that you find most and/or least beneficial to applying factors that **diagnose the level of critical thinking** in the new nurse in the work setting?
3. You rated your learning “X” on the online survey. Based on this score, what content, resources, or activities employed in

diagnosing the level of critical thinking would you improve, add or delete?

Appendix E: Email Inviting Participants to Participate in Study

Dear _____,

Hoping all is well with you. I would like to ask for your assistance in helping me complete the final requirements for my EdD.

I want to invite you to take part in a research study that is part of my doctoral studies in the Graduate School of Education, Rutgers University. You should understand why the study is being done, and what it will involve for you. Please read the following carefully. Ask me if there is anything that is not clear or if you want more information.

What is the Purpose of the Study?

The purpose of this study is to examine the NJAC preceptor education program in which you were a participant. I am especially interested in knowing if you can identify any gaps in the content, resources or teaching strategies that impacted your ability to apply the preceptor role in your facility.

Why have I been invited?

You are invited to participate in this research because you were a preceptor participant in the NJAC preceptor education program.

What will Taking Part Involve for Me?

I ask that you complete an online survey which collects demographic data, and your general rating of each of four key sessions in the preceptor education program (adult learning, providing feedback, supporting new nurses through reality shock/transition, and critical thinking). This survey should take you approximately 15 minutes to complete. A link to the survey will be included in the next email.

Following the survey, you may also have the option to participate in an additional interview at a time scheduled at your convenience. I will conduct the interview, in person or via an online conference service, for approximately 60 minutes. The interview will be recorded and the transcript sent to you for your review and edits. The audio recording and transcript of our discussion will be safely stored on my password-protected computer, as will your contact information. You can choose to participate in the survey only or the survey and the interview.

The data from this study will be used in the completion of my doctoral dissertation, and it may also be published or presented at conferences. To safeguard your confidentiality, I will remove any identifying information when presenting the results. However, you may withdraw from the study for any reason and at any time. If you withdraw from the study, any data that you have contributed will be destroyed.

A link for this study will be sent to you in one week. Please consider providing your valuable input by completing the survey.

Appendix F: Email Containing Survey Link

Dear _____,

Hoping all is well with you. I would like to ask for your assistance in helping me complete the final requirements for my EdD.

I want to invite you to take part in a research study that is part of my doctoral studies in the Graduate School of Education, Rutgers University. You should understand why the study is being done, and what it will involve for you. Please read the following carefully. Ask me if there is anything that is not clear or if you want more information.

What is the purpose of the study?

The purpose of this study is to examine the NJAC preceptor education program in which you were a participant. I am especially interested in knowing if you can identify any gaps in the content, resources or teaching strategies that impacted your ability to apply the preceptor role in your facility.

Why have I been invited?

You are invited to participate in this research because you were a preceptor participant in the NJAC preceptor education program.

What will taking part involve for me?

I ask that you complete an online survey which collects demographic data, and your general rating of each of four key sessions in the preceptor education program (adult learning, providing feedback, supporting new nurses through reality shock/transition, and critical thinking). The survey will also ask you to respond about your general comfort in taking risks and to adopting new innovations (whether comfortable, pragmatic, or reluctant). This survey should take you approximately 15 minutes to complete. A link to the survey will be included in the next email.

Following the survey, you may also have the option to participate in an additional interview at a time scheduled at your convenience. I will conduct the interview, in person or via an online conference service, for approximately 60 minutes. The interview will be recorded and the transcript sent to you for your review and edits. The audio recording and transcript of our discussion will be safely stored on my password-protected computer, as will your contact information. You can choose to participate in the survey only or the survey and the interview.

The data from this study will be used in the completion of my doctoral dissertation, and it may also be published or presented at conferences. To safeguard your confidentiality, I will remove any identifying information when presenting the results. However, you may withdraw from the study for any reason and at any time. If you withdraw from the study, any data that you have contributed will be destroyed.

I invite you to click on the link to participate in this survey: **(LINK WILL BE INSERTED HERE)**

Appendix G: Consent for Interview

Interview Consent Form **With Audio/Visual Recording**

I am a doctoral student in the Graduate School of Education at Rutgers University, and I am conducting interviews for to evaluate the design of the NJAC preceptor education program. I am studying the impact of the NJAC preceptor education program and its impact on participants to effectively apply the concepts of the preceptor role in the clinical setting.

During this study, you will be asked to answer some questions as to your experiences with the NJAC preceptor program, including examples of how you were able to apply preceptor concepts in the clinical setting after the program, gaps or benefits of the various teaching strategies used in each session, and benefits or gaps in the content of each session that impacted your understanding of the concepts. This interview was designed to be approximately a half hour to 45 min in length. However, please feel free to expand on the topic or talk about related ideas. Also, if there are any questions you would rather not answer or that you do not feel comfortable answering, please say so and we will stop the interview or move on to the next question, whichever you prefer.

This research is confidential. Confidential means that the research records will include some information about you and this information will be stored in such a manner that some linkage between your identity and the response in the research exists. Some of the information collected about you includes your level of education, current position, and years of employment. Please note that we will keep this information confidential by limiting individual's access to the research data and keeping it in a secure location. Specifically this information will be stored in an encrypted flash drive that will be kept in my possession. The data gathered in this study are confidential with respect to your personal identity unless you specify otherwise.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be destroyed upon publication of study results (anticipated January 2018).

You are aware that your participation in this interview is voluntary. You understand the intent and purpose of this research. If, for any reason, at any time, you wish to stop the interview, you may do so without having to give an explanation.

The risks of participation include: There are no foreseeable risks to participation in this study. If you feel upset by questions in this interview, you will have the opportunity to discuss these concerns afterward with the Principal Investigator, Nancy Bohnarczyk. In addition, you may report any unexpected events to the IRB Administrator directly using the contact information provided within this document.

You have been told that the benefit of taking part in this study may be an opportunity to reflect on the strengths and weaknesses of the implementation of the NJAC preceptor education program. However, you may receive no direct benefit from taking part in this study.

The recording(s) will be used for analysis of data. **The recordings will not include your name or any other identifier.** If you say anything that you believe at a later point may be hurtful and/or damage your reputation, then you can ask the interviewer to rewind the recording and record over such information OR you can ask that certain text be removed from the dataset/transcripts.

The recording(s) will be stored in an encrypted flash drive with no link to the participant's identity. The recordings will be kept until January 2018 and destroyed upon publication of study results.

If you have any questions about the study or study procedures, you may contact myself at:

Nancy Bohnarczyk
19 Meadow Hills Dr.
Somerset, NJ 08873
732-666-2685
nancy.bohnarczyk.gse.rutgers.edu

You may also contact my faculty advisor Dr. Eli Silk: eli.silk@gse.rutgers.edu

If you have any questions about your rights as a research participant, you can contact the Institutional Review Board at Rutgers (which is a committee that reviews research studies in order to protect research participants).

Institutional Review Board
Rutgers University, the State University of New Jersey
Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Phone: 732-235-2866
Email: humansubjects@orsp.rutgers.edu

You will be offered a copy of this consent form that you may keep for your own reference.

Once you have read the above form and, with the understanding that you can withdraw at any time and for whatever reason, you need to let me know your decision to participate in today's interview.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

Subject (Print) _____

Subject Signature _____ Date _____

Principal Investigator Signature _____ Date _____

Audio/Visual Addendum to Consent Form

You have already agreed to participate in a research study entitled: **Preceptor Education Program: Impact on Implementation of Preceptor Role** conducted by **Nancy Bohnarczyk**. We are asking for your permission to allow us to **audio record** as part of that research study. You do not have to agree to be recorded in order to participate in the main part of the study.

The recording(s) will be used for *analysis by the researcher*.

The recording(s) will include *no identifiers such as your name or place of employment. You will be referred to with a pseudonym such as a color or number*. If you say anything that you believe at a later point may be hurtful and/or damage your reputation, then you can ask the interviewer to rewind the recording and record over such information OR you can ask that certain text be removed from the dataset/transcripts.

The recording(s) will be stored *in an encrypted phone and flash drive with no link to subjects' identity*. The recordings will be kept until *December, 2018* and *destroyed upon publication of study results*.

Your signature on this form grants the investigator named above permission to record you as described above during participation in the above-referenced study. The investigator will not use the recording(s) for any other reason than that/those stated in the consent form without your written permission.

Subject (Print) _____

Subject Signature _____ Date _____

Principal Investigator Signature _____ Date _____