A Measure of Soft Skill Gains Acquisition with Engagement in Baccalaureate Nursing Programs

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The University of Southern Mississippi

A MEASURE OF SOFT SKILL GAINS ACQUISITION WITH ENGAGEMENT IN
BACCALAUREATE NURSING PROGRAMS

by

Wendy Williams-Buenzli

Abstract of a Dissertation
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

May 2015
ABSTRACT

A MEASURE OF SOFT SKILL GAINS ACQUISITION WITH ENGAGEMENT IN BACCALAUREATE NURSING PROGRAMS

by Wendy Williams-Buenzli

May 2015

This dissertation examined soft skill acquisition from engagement in baccalaureate nursing programs. Baccalaureate nursing programs prepare nurses to be the future leaders of nursing practice. Soft skills include critical thinking, interpersonal communications, and ethical decision-making. To explore the acquisition of soft skills, this research study analyzed data from the National Survey of Student Engagement to explore for gains in critical thinking, ethical decision-making, and critical thinking. After gains scores were identified, then correlations were run to identify key engagement indicators. The findings of the study found gains in soft skill behaviors from freshman year to senior year of baccalaureate education. There was significant correlation with key engagement indicators, which were associated with gains in soft skills.
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A Dissertation
Submitted to the Graduate School of The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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May 2015
DEDICATION

You gain strength, courage, and confidence by every experience in which you really stop to look fear in the face. Do the one thing you think you cannot do.

—Eleanor Roosevelt

Completing this dissertation was the one thing that challenged me beyond my limits, stretched my imagination, and allowed me to find my nursing passion. Without my family, friends, and mentors, I would have not achieved this dream.

First, I thank my children—Paden, Carsen, Connor, and Kirsten. You are a gift, and I am grateful that you are in my life. The four of you have known me with my head in the books, writing a paper, or reading an article. To the four of you, I leave this legacy to never stop learning and challenging yourself. I love you more than you will ever know.

Second, I would like to thank my family and friends, both alive and who have passed. To my mom and dad, thanks to you for providing unconditional love and acceptance throughout my life. The two of you never gave up on me and always saw my true potential, even when I could not. Grant and Donna, thank you for loving me as your own daughter. Providing a belief in my abilities when I had none kept me going to completion. Grandma Alice and Alvida, who both transitioned during my studies, you set the standards for hard work, dedication, and excellence.

To my inner circle of friends who never let me quit or give up on my dream of becoming a PhD, thank you. Trish, Nancy, Sheryl, Sherry, and all “my women,” you are my sisters and have shown me true love and support.
Finally to Nate, thanks for being my friend, soul mate, and partner in life. You made my dreams your dreams. You want better for me than yourself. Because of you, I was able to complete this dissertation and become my best self.
ACKNOWLEDGMENTS

Thanks and acknowledgment to my committee members and colleagues who provided direction during this dissertation process. Dr. Davis, thank you for guidance and wisdom as chair of my committee. If it were not for you, I would have given up a long time ago.

Thank you to my committee members, Dr. Story, Dr. Boykin, and Dr. Britton. Dr. Britton, your work inspired me and gave me a purpose and direction. Special thanks to Dr. Lundy for continued support and encouragement through this process. Thank you for having faith in me. Dr. Reed, your guidance and expertise with statistics helped me to develop a statistically sound dissertation.
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<th>Abbreviation</th>
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<tr>
<td>AACN</td>
<td>American Association of Colleges of Nursing</td>
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<td>ANOVA</td>
<td>Analysis of Variance</td>
</tr>
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<td>BIPN</td>
<td>Behavioral Inventory for Professional Nursing</td>
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<td>BSN</td>
<td>Bachelor of Science in Nursing</td>
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<td>CCNE</td>
<td>Commission on Collegiate Nursing Education</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>IRB</td>
<td>Institutional Review Board</td>
</tr>
<tr>
<td>MANOVA</td>
<td>Multivariate Analysis of Variance</td>
</tr>
<tr>
<td>NCLEX</td>
<td>National Council Licensure Exam for Registered Nurses</td>
</tr>
<tr>
<td>NDT</td>
<td>Nursing Dilemma Test</td>
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<tr>
<td>NSSE</td>
<td>National Survey of Student Engagement</td>
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<tr>
<td>RMMANOVA</td>
<td>Repeated Measures Multivariate Analysis of Variance</td>
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<td>SPSS</td>
<td>Statistical Package for the Social Sciences</td>
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CHAPTER I
INTRODUCTION

Statement of the Problem

The job market is competitive. Employers want graduates who are skilled in technical and interpersonal skills (Beard & Surendran, 2008). Graduates need adequate preparation to manage complex patient care situations as well as lead the interdisciplinary nature of healthcare. Hence, nurses and new graduates who are skilled beyond minimum employment standards are prepared for the current healthcare system. Nurses, especially baccalaureate-prepared nurses, have an expectation to excel in the workplace as leaders (Lazarus, 2013). Bachelor of Science in Nursing (BSN) education encompasses all the coursework taught in associate degree programs but adds a more in-depth engagement with the physical and social sciences, nursing research, public and community health, nursing management, and the humanities. The design of the additional coursework is to specifically enhance students’ professional development. BSN nurses are prepared with a broader scope of practice and a better understanding of the cultural, political, and social issues that affect patients and influence healthcare delivery (American Association of Colleges of Nursing [AACN], 2014).

Employers require new nursing graduates demonstrate specific skills that prepare them to function in multidisciplinary teams with expanding responsibility (Benner, Sutphen, Leonard, & Day, 2010; Coplin, 2003). The theoretical focus of BSN education leads employers to expect that these graduates have the basic skills to be the leaders on a nursing unit. Despite a comprehensive nursing education, new graduates are underdeveloped to lead teams, negotiate with colleagues, and/or lead projects (Hancock, 2014).
The structure of healthcare has become highly complex. Patients are more acute, the work site is highly technical, and the financial bottom line is priority (Boykin & Schoenhofer, 2001). Patient care occurs through collaboration with multidisciplinary teams. Often nurses lead these multidisciplinary teams. As healthcare becomes more interdisciplinary, there is an increase in cross-functional teams. A cross-functional team is a group of individuals with different skill sets working together to achieve a common goal. The leader of these teams is responsible for the common goal but has no positional authority with the members. The complicated role of nursing leaders creates challenges when ensuring a team can meet its goals. Learning to successfully navigate the cross-functional team is important for any health professional (Lazarus, 2013). Nurses and other professionals must learn skills to influence change through interpersonal performance (Bedwell, Fiore, & Salas, 2014).

*Soft Skills in Education and Practice*

Soft skills are behavioral skills or attributes that leaders use to produce desired results (Sharma & Sharma, 2010). These attributes prepare the nurse with the tools needed to provide quality care and meet the complex needs of the healthcare environment. Soft skills are the tools that help nurses navigate the difficulties of teams. Key components of soft skills include the following: (a) building trust, (b) understanding and managing work expectations, (c) adapting communication style to meet the demands of the situation, (d) providing effective coaching and feedback, (e) coping with stress, (f) dealing with conflicts, (g) delegating effectively, and (h) addressing employee habits effectively (Ashbaugh, 2003). Often soft skills can equate to one’s ability to get along with others through teamwork, communication, and ethical behaviors (James & James, 2004). Technology, patient acuity, and staffing shortages
create an environment where interpersonal skills are crucial to success (Bedwell et al., 2014).

Benner et al. (2010) described the challenge for nurse educators to bridge the gap between education and practice. Educators may focus on the specific hard skills needed for safe practice with little emphasis on the soft skills needed to function in the clinical setting. Educational institutions often place excessive emphasis on the technical abilities (hard skills), and students may leave the university without developing the key soft skills employers are requiring. Gone are the days when skills ruled nursing curricula (Shultz, 2008). Simply teaching technical skills will not prepare the future graduates for the demanding multidisciplinary work environment (Sharma & Sharma, 2010). Nursing education is responsible for preparing the nurse to excel in this changing environment (Benner et al., 2010). The challenge to educators is to take the initiative to teach not only the hard skills but also the soft skills during a student’s time at the college or university. Educators have significant influence on students (Benner et al., 2010). They have a responsibility to use influence to develop soft skills throughout the student’s educational experience (Shultz, 2008).

Nurses may be prepared with hard skills, but soft skills ensure the job is done with quality (Sharma & Sharma, 2010). Soft skills are essential to entry-level success within an organization. Employers rate soft skills as invaluable to industry (Wilhelm, 2004). The nurse manager or organizational leader may be looking for personal qualities in their employees. Employers desire strong leadership (Perreault, 2004). Training of hard skills is much easier than developing soft skills in new employees (Wong, 2012). A nursing education alone is not enough to secure a good quality job, but the individual’s soft skills can make all the difference in the interview. Strong soft
skills provide a better candidate (Wong, 2012). For instance, a 2010 survey of 2,000 executives found that 9 out of 10 executives reported soft skills enhanced business practice but that less than half rated their employees as possessing these soft skills (America’s Edge, 2011; Perreault, 2004).

According to Ashbaugh (2003), employers seek nurses who have the abilities (i.e., leadership and critical thinking) to work effectively as a member of interprofessional teams across a variety of settings in order to provide quality care. Furthermore, employers purportedly desire nurses trained to be safe and effective while providing competent care; soft skills seemed to address these needs (Ashbaugh, 2003; Wilhelm, 2004). One chief executive officer (CEO) described how a leadership team proactively developed a program to train nurses in soft skills (Ashbaugh, 2003; Ray & Overman, 2014). This training produced a stronger nurse and increased retention in the nursing care unit. Ashbaugh (2013) proposed that the more developed nurses’ soft skills are, the more prepared they are to adapt to the changing nursing profession. Soft skills and the mastery of said skills increase quality, patient care, and safety in clinical practice (Lazaraus, 2013; Ray & Overman, 2014).

Nurses with a higher level of soft skills may provide a solution for decreasing turnover rates in hospital settings. Fewer turnovers lead to money saved for an organization. The average cost to lose a nurse is over $40,000. Institutions that lose many nurses can see losses into the hundreds of thousands of dollars (America’s Edge, 2011). Murray (2011) proposed that key causes of hospital turnovers are rooted in a lack of soft skill behaviors, such as leadership, communication, and organizational structure. Murray (2011) discussed the cost of attrition in the nursing profession. Large turnover of nurses can equate to thousands of dollars lost depending on size and type of
organization. Training nurses is expensive and time-consuming. If a lack of soft skills in leadership and management were a contributing factor, ensuring that new nursing graduates trained with these skills would be beneficial for employers.

**Theoretical Framework**

Soft skills are important key indicators of a leader (Shultz, 2008). An evaluation of leadership theories provided support for the need of a nurse well-versed in soft skills; however, this concept is still somewhat rudimentary in nursing jargon. Only when caring theory was explored and an evaluation of the key phrase *leader as caring* did the Caring Leadership Model emerge as a viable theoretical underpinning (Davidson, Ray, & Turkey, 2011; Williams, McDowell, & Kautz, 2011). The Caring Leadership Model combines Watson’s (2009) Caring Theory (caring science) with Kouzes and Posner’s (2006) Leadership Theory (leadership challenge) to create a model of the nurse as a caring leader.

The Caring Leadership Theory is based on a foundation of shared decision-making and a model of relationship care that guides leadership practices (Williams et al., 2011). Using the Caring Leadership Theory as a model (Williams et al., 2011), this researcher conducted an evaluation of key caring theories, which provided a link between key soft skills behaviors and key caring behaviors that are vital to the nurse leader. Boykin and Schoenhofer (1993, 2001), Mayeroff (1971), and Watson (1988, 2009) identified key behaviors linked to caring (see Appendix A). Using the concept analysis (Walker & Avant, 2005) data, this researcher was able to make a connection to the behaviors theorists identified as key caring behaviors and linked them to key soft skills behaviors (see Appendix B).
Williams et al. (2011) followed a similar path with the Caring Leadership Model. This researcher took the analysis a step further and compared key caring theories to the Caring Leadership Model. This analysis confirmed that critical thinking, interpersonal behavior, communication, and ethical decision-making skills are keys to a caring nurse leader. This foundational model was the basis for this study.

The analysis explored the concepts of caring and leadership as a whole by combining concepts. The model of caring leadership is not about a top-down approach that gives power at the expense of another (Williams et al., 2011). Caring leadership promotes a practice of leading with head and heart to influence change (Tanner, Benner, Chelsa, & Gordon, 1993). Mentorship and modelling are key components for the caring leader by learning authenticity and acknowledgment of the heart (Williams et al., 2011). By embracing one’s self and unique attributes, the individual can utilize this leadership practice (Boykin & Schoenhofer, 2001).

Purpose of the Study

The purpose of this study was to explore gains in soft skills from engagement in BSN education and identify key variables that correlate to soft skill acquisition. Soft skills include, but are not limited to, honesty, team building, problem-solving, critical thinking skills, and communication (Stumpf, 2007). Shultz (2008) identified the university as the place where students develop soft skills. As the educational needs of nursing students are changing, educator’s goals must follow suit. The nurse faculty should prepare students for integration into practice in hard and soft skills.

Hard skills are not enough for adequate preparation. Hard skills may consist of a specific task or technical knowledge and are measurable from an objective standpoint (Ashbaugh, 2003; Houghton & Proscio, 2001; Zhang, 2012). Hard skills are specific
tangible tasks that require a specific skill set that an individual may be trained to do (Schulz, 2008; Zhang, 2012). Hard skills may be the action of placing an intravenous catheter, conducting a lung assessment, or administering a medication. Soft skills by contrast are intangible behavioral traits that enhance or endorse knowledge or skills in the workplace (Sharma & Sharma, 2010). By the nature of design, nursing students need opportunities to engage in key soft skill development activities in nursing programs, yet this assumption has not been adequately tested. If one expects the BSN nurse to be the leader of the profession, the key to attaining this expectation is soft skills and measurement of said soft skills.

Research Questions

This study was designed to explore gains in soft skills and key variables that may correlate with soft skill acquisition. In order to investigate gains in soft skills, retrospective data from the National Survey of Student Engagement (NSSE) survey data were coded and analyzed using Britton (2013) Soft Skills Scalelet and the Pike (2006a, 2006b) Engagement Scalelet. Britton’s (2013) Soft Skills Scalelet was used to explore gains in key soft skill behaviors from freshman to senior years of BSN education. Using the data from the gains, a partial correlation analysis was conducted to explore if patterns of relationships exist with engagement gains (Pike, 2006a, 2006b).

The researcher sought to answer the following research questions:

1. What are the gains in soft skills that result from engagement in BSN education?

2. What are the correlations between specific NSSE benchmarks and perceived gains in soft skills?
Definition of Terms

For the purpose of this study, the conceptual and operational definitions were as follows:

1. **Soft skills theoretical definition**: Soft skills are the intangible behavioral traits that enhance or endorse knowledge or skills in the workplace (Sharma & Sharma, 2010).

2. **Soft skills operational definition**: Soft skills include, but are not limited to, communication skills, interpersonal skills, critical thinking, and the ability to make ethical decisions (Britton, 2013). The specific variables measured were communication skills, interpersonal skills, critical thinking skills, and ethical decision-making skills. These particular variables are linked to specific activities or questions that are identified on the NSSE survey.

3. **Communication skills**: A component of soft skills is one’s ability to communicate with others. Communication skills are the activity of conveying information through thoughts, messages, speech, writing, and behavior. The NSSE survey data includes specific questions targeted at key communication behaviors. The behaviors measured on the NSSE survey are the following: asking questions, discussing an issue or problem, talking with students and/or instructors, and speaking clearly and effectively.

4. **Interpersonal skills**: Behaviors people use to interact with other people, individually or in groups. Behaviors include, but are not limited to, teamwork, stress management, coping, motivation, flexibility, adaptability, and social graces or etiquettes. For the purpose of this research, key behaviors of interaction with others were explored. The key behaviors of interpersonal
communication were measured using the NSSE survey through specific questions that measure how students and faculty interact in and outside of the class and work effectively with others.

5. **Critical thinking**: “Critical thinking is an individual’s ability to analyze, evaluate, infer, and inductively reason when faced with a problem” (Facione et al., 1994, p. 344). Critical thinking is a difficult concept to measure. The NSSE survey identifies key questions that measure critical thinking behaviors. The key behaviors measured are analyzing problems, thinking critically, thinking analytically, synthesizing information, applying theories, and making judgments.

6. **Ethical behaviors**: Ethical decision-making is using one’s beliefs of right and wrong to influence behavior (Cerit & Dinc, 2013). These behaviors can include, but are not limited to, honesty, integrity, and truthfulness. For the purpose of this study, a general view of ethics was explored. Ethical decision-making is a “rational process and includes sequential phases of problem recognition, problem identification, and evaluation of alternatives and the selection of an alternative” (Cerit & Dinc, 2013, p. 2). For the purpose of this study, ethical decision-making was one’s ability to make the right decision when the decision is presented. Ethical decision-making is operationally defined as being truthful, turning in original coursework, not copying from another student, and coming to class prepared.

7. **BSN programs**: Four-year programs that award a BSN degree prior to licensure. The first-year students in this study had not engaged in nursing content.
Traditionally, nursing students engage in nursing content their junior year of baccalaureate education.

Summary

This chapter introduced the concepts of soft skills and their link to nursing leadership. The theoretical and operational definitions were provided for critical thinking, ethical decision-making, and interpersonal communication. The theoretical framework that guided the study was introduced and explained. This chapter set the foundation for the study and provided the research questions that explored soft skill acquisition in BSN nursing programs.
CHAPTER II

REVIEW OF RELATED LITERATURE

This literature review defined and guided this dissertation by focusing on three major areas of discussion. The first section provided a comprehensive review of current research in an attempt to discover the state of this science. The next section explored the theoretical framework. The final section identified the gap in current research and the need for future study.

Need for Soft Skills

Beard and Surendran (2008) identified the need to provide adequate preparation of soft skills for students during their academic years. The preparation happens in and out of the classroom setting. Measuring how this change occurs can be difficult. A wide variety of tools exists that can be used to measure soft skills at the individual level using questionnaires, but no tool is available that measures soft skills at a programmatic level. Finding a measure of gains and/or losses during nursing BSN education is nonexistent in nursing literature. No single study reported if nurses were prepared at the end of their BSN nursing education program.

Organizations need the means to identify and measure skills that prepare students for the demands of the corporate environment. The evaluation is more than just the nursing knowledge a student acquires during his or her education. The National Council Licensure Examination for Registered Nurses (NCLEX-RN) measures the “hard skills or the nursing science part of a student’s experience in BSN education” (AACN, 2014; Romeo, 2010, p. 378). One can argue that NCLEX-RN measures critical thinking and communication skills as they are directly related to hard concepts. To identify if students will be successful leaders, other measures should be taken into
consideration as the NCLEX (at this time) is not designed to measure the soft skills (Giddens & Gloeckner, 2005). As the nursing profession continues to evolve and more simulation-based exams are developed, one may see soft skills measured. Unfortunately, soft skills have not been identified as a priority in nursing education.

Soft skills are threaded throughout the college experience in assignments, group projects, portfolios, surveys, self-reports, and/or standardized tests (Shultz, 2008). The National Survey of Student Engagement (NSSE) (2014) is a national survey used by colleges and universities to explore students’ engagement during their time at the university. The questions were designed to elicit responses on how students spend their time during college years and what they gain from experiences in and out of the classroom. In 2012, 328,860 students participated in this study. The questions asked in the survey measure different aspects of soft skills. The study was administered in freshman and senior years. Britton (2013) first used the NSSE data to measure gains and/or losses in soft skills for information technology students. This researcher conducted a retrospective study using NSSE data to explore gains in soft skills from engagement in BSN programs. The NSSE data, while secondary data, provided a large cross-sectional set of BSN student data from a variety of university settings.

State of the Science

The review of literature started with the state of the science and explored how the discipline of nursing is studying and writing about soft skills. This initial search produced a limited number of scholarly articles. Most of the literature searches conducted in nursing science produced editorials and/or antidotal articles about the need for soft skills in the new nurse leader. The exploration for substantive literature/data was expanded to other disciplines. Expanding the exploration proved to be beneficial.
A large number of studies explored soft skills as they applied to leadership in varying disciplines. The following disciplines have conducted various studies on soft skills. Their relationship to leadership included education, information technology (IT), business, and engineering (Beard & Surendran, 2008; Britton, 2013; Lazarus, 2013; Radhika, 2013; Sharma & Sharma, 2010; Stumpf, 2007; Zhang, 2012). Exploration of soft skills has shown they are not specific to nursing but specific to quality leadership. Each discipline may describe the key behaviors with slight differences. The commonality among all disciplines was the major themes: communication, critical thinking, ethical decision-making, and interpersonal communication (Beard & Surendran, 2008; Britton, 2013; Lazarus, 2013; Radhika, 2013; Sharma & Sharma, 2010; Stumpf, 2007; Zhang, 2012).

Importance of Soft Skills

Nursing skills are the perfect balance of objectivity (hard skills) and subjectivity (soft skills). Nursing skills can be difficult to define and articulate depending on the particular skill. Regardless of skill, a shift has occurred that increases the need for qualified individuals who have the soft and social skills to function in an organization (Hillage, Dickson, & McLoughlin, 2002). However, a debate among disciplines is ongoing over what specific soft skills are important (Britton, 2013). The literature supported a wide variety of attributes, including positive attitudes toward change, self-confidence, self-promotion, exploring and creating opportunities, and political focus. Windsor, Douglas, and Harvey (2012) highlighted the importance of developing specific attributes in the workplace. Employers seek employees who have positive attitudes to life and work, getting along with workmates, and work as a team. Grugulis and Vincent (2009) highlighted employers who seek punctuality, loyalty, and discipline.
The list of attributes was lengthy and brought together a melting pot of personal traits, attitudes, qualities, social capital, and predispositions. Few of these attributes seem to be based on anything beyond idealized and normative employer wish lists. There has been little attempt to link any of these criteria to what happens in the workplace (Britton, 2013).

Nurses must change their perceptions and pull from the corporate world. Nurses who can understand the importance of a skill in a social setting and how it affects patient satisfaction, work relationships, and job performance are able to function as a leader on their respective unit. Nursing retention is a concern for nursing education and employers. The average cost to train a nurse starts at approximately $22,000 and increases depending on specialty. Cullen (1999) presented the correlation between nursing leadership skills and retention in nursing practice. Nurses who felt more prepared to lead had less instances of leaving their current employment setting (Cullen, 1999). Leadership skills are often intertwined with soft skills. These skills are the foundation for a fully functioning nurse who can lead the profession into the next century. When exploring these skills, differentiating between leader and manager is important. While managers plan, organize, and control a given situation, power is the central theme of their positions. Leaders are different. One does not need to be the “boss” to lead. Leadership is about influence, and positive influence leads to successful nursing.

Determining the impact soft skill changes are having on the delivery of patient care is essential to understand. Some evidence suggests that a reduction in nursing staff below a certain level can relate to poor patient outcomes (Maschuw et al., 2011). Satisfaction levels in practice are twofold; they have a direct link to patient care as well
as employee retention. Conducting a thorough assessment of system changes and satisfaction level health professionals have in their jobs can be directly related to retention. This assessment is particularly important since some researchers suggested that job dissatisfaction, over a period of time, can result in burnout, and eventually turnover (St. Lukes Hospital Network, 2000). Finally, understanding the impact of job dissatisfaction has significant implications for BSN education and the preparation needed by future nurses to help them adjust to the changed environment. Nurses have the responsibility, because of their numbers and their critical role in the delivery of care, to take a leadership role in influencing how care is delivered. Helping professionals cope with changes in the system is not enough. Taking a proactive role in the setting of patient care goals and policy is important (Bowen, Lyons, & Young, 2000).

Measurement of Soft Skills

Ashbaugh (2003) differentiated soft and hard skills by how they are measured. Hard skills are specific clinical or technical skills, which are usually task-oriented. Hard skills are measured by the effect they have on the individual acquiring them. In contrast, soft skills are defined as the “interpersonal or emotional skills that are generally measured by the effects produced in others” (Zhang, 2012, p. 158). Important soft skills for the workforce include building trust, understanding and managing expectations, adapting communication styles, providing effective feedback, coping with stress, delegation, and addressing issues as they arise (Ashbaugh, 2003).

Healthcare organizations focus their training efforts on hard skills. While this focus is important, healthcare is filled with a diverse group of individuals. One must be able to navigate through all the different levels of education, intellect, and talents among a variety of employees. Healthcare spends little to no money on the
development of soft skills. Employees often leave work not because of the duties but because of a poorly skilled manager. The interpersonal actions can have the longest effect on retention of nursing staff (Sturgeon, 2008). Ashbaugh (2003) stated that the healthcare environment demands leaders who can see the larger vision of the organization, communicate effectively, see solutions, and can make difficult decisions.

Employers have identified a current demand for soft skills as well as social skills. Leaders realize the relationship between soft skills, quality, and performance (Kaipa, Milus, Chowdary, & Jagadeesh, 2005). Soft skills then become a key indicator of success in the workplace. These behaviors include leadership, decision-making, conflict resolution, and creativity.

Soft skills provide a way to get the highest return on investment in terms of human capital. This shift in focus on hiring people with this skill set creates a culture of teamwork and commitment to quality. Humility is an important aspect that one needs to embrace. Individuals need to have the skill set to make the right decisions at the right time. Kaipa et al. (2005) equated difficulties in industry to “poor people skills” (p.2). An increase in soft skills can be what keeps the employees at an organization. As industry changes, leaders need to be able to manage conflict, delegate appropriately, coach others, network, and manage problems with solutions.

Soft Skills Defined

After an extensive review of literature, soft skill specific studies were very limited. Exploring multiple disciplines did not provide large numbers of scholarly research. The search was expanded to explore how each individual soft skill was defined, independent of the other skills, and then cross-referenced with soft skills definitions of said skill. This technique provided a more comprehensive look at each
skill and then allowed the researcher to confirm definitions of said skills from the soft skill research.

*Communication/Interpersonal Skills*

Communication and interpersonal skills are two soft skills that are often combined in research. Strategically using interprofessional skills combined with effective communication can enhance patient outcomes (Lazarus, 2013). Medical science separated communication and interpersonal skills as two separate behaviors. For example, Rider, Hinrichs, and Lown (2006) outlined the importance of communication and interpersonal skills as essential skills for quality patient care. Physicians with good communication and interpersonal skills experienced patients achieving better healthcare outcomes. Ensuring that physicians have opportunities to learn and gain competence in communication and interpersonal relations should be key components of medical training (Lazarus, 2013; Rider et al., 2006).

As healthcare changes in complexity and diversity, nurses work in collaborative environments to provide safe and reliable care (Wood, Flavell, Vanstolk, Bainbridge, & Nasmith, 2009). Wood et al. (2009) conducted a study on competency with interprofessional collaborative practice in a pediatric acute care setting. The aim of this study was to explore a framework to guide curriculum in pre-licensure nursing education that focused on interprofessional behaviors. Wood et al. (2009) found that having a strong curriculum with opportunities to learn interprofessional skills prepared nurses to be effective in today’s healthcare setting. Nursing cannot be accomplished in isolation but through engagement with others. How one engages with others is the basic core of communication and interprofessional skills (Beck, 2012; Contino, 2004;
Lazarus, 2013; Wood et al., 2009). Just as important as ethics, communication and interpersonal behavior are a choice one makes to do right by the situation.

Britton (2013), Mitchell (2008), and Stumpf (2007) extensively reviewed the basic tenants of communication and interpersonal skills in their dissertations. These three dissertations were from different disciplines (education, business, and information technology), but they researched the key skills of communication and interpersonal skills. What was clear in all three dissertations was the importance of communication and interprofessional skills. Regardless of the discipline, communication and interpersonal skills were vital for success of a graduate in the workplace (Britton, 2013; Mitchell, 2008; Stumpf, 2007).

Mitchell’s (2008) research focused on the importance of soft skills to career success (specifically business). Hoggatt (2003) confirmed the necessity of soft skills for success and highlighted employers’ desire for communication in prospective candidates. Communication is a broad skill that may be interpreted differently by each party involved in the communication. Communication is not limited to the verbal use of language but can include attending meetings, reports, presentations, clarifying and answering questions, work coordination, promoting an organization, etc. (Lehman & DuFrene, 2008). Understanding the importance of communication and how to use it effectively is important to any individual hoping to succeed in his or her career (Hoggatt 2003; Mitchell, 2008).

Communication is fundamental to nursing practice. An example of the criticality of communication in nursing is highlighted in Ray and Overman’s (2014) research on soft skills in nursing leadership. Poor communication leads to ineffective delegation, which can lead to compromised or missed patient care. A unit with poor
communication and interpersonal practices ultimately leads to adverse patient outcomes (Kalisch, 2006; Ray & Overman, 2014). With an understanding of this principle, Ray and Overman (2014) created a partnered practice model. This training model used role clarification, creating community norms, and quality delegation. The findings demonstrated that quality delegation had clear, concise communication at its core (Ray & Overman, 2014). Using this partnered practice model, patient satisfaction with nursing increased from 57% pre-model to 95% post-model. These data provided positive findings by implementing an intervention that focused on communication and interpersonal skills. The implementation of the partnered practice model supported the finding that effective communication and interpersonal skills “positively effects clinical outcomes and the patient experience” (Ray & Overman, 2014, p. 5).

The stakes are high for nurses to use professional language that is appropriate to the patient and in terms the patient can understand. In addition, nurses must be able to communicate with one another and have the courage to have difficult conversations (Kalisch, 2006; Lazarus, 2013; Ray & Overaman, 2014). Peplau (1997) highlighted the importance of a nurse skilled in communication, both verbal and nonverbal. The skill of communication helps nurses develop relationships with patients which ensures nurses deliver quality care. Communication skills, especially with nurses’ co-workers, are important to the daily business in a nursing care setting.

Ethical Decision-making

Ethical decision-making was the next key soft skill examined in the literature. In addition to studies highlighting communication and interpersonal skills, the next key theme that emerged was ethics. Ethics was described in multiple ways, such as telling the truth, making the right decision when one was confronted; in some cases, the skill
was just defined as personal ethics (Beard & Surendran, 2008; Britton, 2013; Lazarus, 2013; Radhika, 2013; Sharma & Sharma, 2010; Stumpf, 2007; Zhang, 2012). Nurses make hundreds of decisions each day. Healthcare changes increase moral questions as science, medicine, and biotechnology advance (Lazarus, 2013). Medicine can prolong life through a variety of methods. These methods create a set of ethical situations.

Cerit and Dinc (2013) studied the relationship between nurses’ ability to make an ethical decision and demonstrate professional behavior. This study was a descriptive study conducted in two phases to identify the correlation between ethical decision-making and professional behaviors. Using the Nursing Dilemma Test (NDT) and Behavioral Inventory for Professionalism in Nursing (BIPN), Cerit and Dinc (2013) examined nurses’ level of decision-making and professional behavior. Nurses were familiar with ethical dilemmas and had a skill set to address said dilemma. Cerit and Dinc (2013) found that nurses’ professionalism was reported as low in this tool. Low professionalism (with this study there was a correlation between NDT scores and BIPN) influenced ethical decision-making (Cerit & Dinc, 2013). This finding is noteworthy as ethical decision-making is not independent of other soft skills.

Nurses do not use one set of tools to answer ethical dilemmas. Nurses use many approaches to solve a problem. The difference in nurses’ perspectives is what can lead to conflict (Botes, 2000). Botes (2000) explored different approaches to ethical decision-making. Botes (2000) concluded it is not the ability to make a decision, but the way one approaches making the decision that is central to ethical decision-making. In addition, the lack of ability to communicate the decision and collaborate on different decisions was problematic. Marques’ (2013) research concluded ethical decision-
making is an important skill that is fundamental to leadership. Ethical decision-making is a concept specifically called out as a key soft skill.

Multiple disciplines studied the ability to make an ethical decision (Arjoon, 2006; Cavusgil, 2007; Kimmel, Smith, & Klein, 2011). Business, IT, education, medicine, and nursing are disciplines where ethics are common practice. Research supports the measurement of ethical decision-making skills. It is important to note measurement is not independent of other key soft skills (Botes, 2000; Ceric & Dinc, 2013; Cooper, 2012). Methodology was not the focus of this study; the focus was to explore how ethical decision-making creates the leader. Further research needs to be conducted focusing on soft skills as a group of clustered behaviors that influence nursing practice.

Critical Thinking

The final soft skill to discuss is critical thinking. As was stated previously, multiple disciplines define critical thinking as a key soft skill (Beard & Surendran, 2008; Britton, 2013; Lazarus, 2013; Radhika, 2013; Sharma & Sharma, 2010; Stumpf, 2007; Zhang, 2012). Critical thinking is not only a key component of nursing curriculum but other disciplines as well (CCNE, 2008; Marques, 2013; Romeo, 2010).

Romeo (2010) performed an integrative review of the literature to analyze measurement of critical thinking abilities in undergraduate nursing students. A key assumption from this research was that critical thinking is a necessary skill for nursing practice. One important finding is that critical thinking can be taught, learned, and measured (Romeo, 2010). Simpson and Courtney’s (2002) research confirmed that critical thinking was a foundational part of nursing practice and it can be taught.
Multiple tools exist to measure specific critical thinking behaviors (Brunt, 1993; Romeo, 2010; Shin, Jung, Shin, & Kim, 2006; Simpson & Cortney, 2002). What the research had in common was the specific behaviors measured. The key components were analysis, evaluation, inference, and reasoning. How each is specifically defined is slightly different, but these key concepts are identified and measured consistently throughout the literature. This research included nursing as well as other disciplines, such as IT, education, physicians, and engineers (Beard & Surendran, 2008; Britton, 2013; Brunt, 1993; Lazarus, 2013; Radhika, 2013; Romeo, 2010; Simpson & Cortney, 2002; Stumpf, 2007; Zhang, 2012).

Theoretical Framework

Soft skills are not specific to the nursing discipline but are specific behaviors for a leader. Several disciplines identified soft skills as key leadership tenants and fundamental for new graduates as they prepare for the demands of the workplace.

As nursing knowledge has continued to advance from a technological standpoint, the meaning of why one becomes a nurse may be lost (Williams et al., 2011). The research of soft skills confirmed this issue. Nurses are tasked with multiple challenges that take them away from the primary focus of nursing—patient care. Managing schedules, machines, and technology would not be imperative without the patient. Learning how to work with people is an important skill set for managers when hiring and looking for the best and brightest college graduates. The theoretical knowledge may be present, but how to deliver this knowledge effectively may be lost.

Soft skills cannot be explored without leadership theory. Leaders who are successful and can function in the changing healthcare environment do so because they can manage their human capital (Nebelung, 2010). Caring leadership changes the focus
of people as objects to people as human beings (Watson, 1988, 2009). When linking soft skills with caring theory, the following theorists (Boykin & Schoenhofer, 1993, 2001; Mayeriff, 1971; Watson, 1988, 2009) identified caring as a key leadership behavior. To understand how caring was related to leadership, the key leadership behaviors were translated to explore the link between nursing and leadership. These care behaviors allow the nurse to be present in situations. Nurses who act in these care behaviors provide safe and effective care. When cross-referencing the caring theories with soft skill definitions, it became clear that soft skills create the caring leader.

The caring leader is able to leverage key behaviors to provide change within an organization. Behaviors needed to function at a high level of leadership are the soft skills defined earlier in this chapter. The key attributes of caring leadership fit nicely with the key attributes of soft skill behaviors. The caring leader functions with kindness, compassion, and equanimity. These attributes equate to interpersonal behaviors and ethical behaviors (Davidson et al., 2011). This theory defines the need to co-create, reflect upon, and use wisdom to solve problems. Critically thinking is a key attribute that fits with this theory. The caring leader is a leader who functions daily with key soft skill behaviors (Williams et al., 2011).

This literature review investigated skills needed by new nurse graduates to succeed in the ever-changing healthcare environment. Significant research studies described the need for soft skills across multiple disciplines. Business and IT were the two disciplines with the largest body of work surrounding this topic; while nursing had the least amount with virtually no research studies dedicated to soft skills. As was stated in the introduction, no longer is a proficiency in hard skills enough for the nurse
to excel. The new nurse must be skilled with more than just empirical knowledge of nursing.

Nurses must learn critical reasoning strategies. These strategies must be learned based on models for successful intervention. Just as cardiopulmonary resuscitation is practiced and reviewed continually for the successful rescue of patients in crisis, so must critical reasoning strategies. Soft skills must become second nature to healthcare personnel so that they are able to deal effectively with constantly shifting priorities and policies. These soft skills directly affect a nurse’s ability to deliver care and provide a sense of professional control over immediate environments. The priorities of the healthcare system are changing almost daily. With increased workloads and shrinking resources, it is becoming valuable for nurses to learn how to manage their time, organize their job in light of shifting demands, and be able to prioritize assigned tasks. Soft skills application is particularly important with the emphasis on cost-containment and efficiency of operation. The ability to organize and prioritize underlies effective patient care delivery in a demanding healthcare environment. Effective time management skills are essential when working in a time-limiting situation (Bowen et al., 2000).

Scalelets

Scalelets are groups of items related to a single content area or construct. These sets of items may define a set of experiences or groups of questions that assist the researcher in generalizing about a particular subject (Pike, 2006b).

Britton Soft Skills Scalelet

Britton (2013) linked questions on the NSSE survey to specific soft skills behaviors. The scores from the survey indicated engagement in said soft skill. For
example, a question may ask if the student participated in a specific ethical behavior. The question would ask if a student engaged on a range from *frequently* to *never*. A student who responded *never* in the freshman year and *frequently* in the senior year would be scored as a positive response. Hypothetically, one would expect freshmen to have more *never* responses and seniors to have more *frequent*; but this has not been studied, thus the purpose of this research.

One important concept to clarify when exploring the use of a scalelet to examine soft skill gains is that engaging in soft skill behavior is not a negative or positive experience. If the student has a low score at the freshman year, then one could hypothesize the score would be higher after exposure to a college education. A gain in said response would be a student who reported *never* on the freshman survey and *frequently* on the senior survey. This response would equate to a gain in soft skills. However, there is no one method to measure gains in soft skills. The scalelet is not exploring specific curricula or methodology around education. These skills were then linked to specific questions on the NSSE data. This action confirmed Britton’s (2013) work on linking soft skill behaviors to NSSE questions on the NSSE survey instrument.

Although the individual questions are ordinal in nature, subscales were created from the results of several relevant questions. As such, the scales were not as discrete as the individual questions, but rather continuous in nature. Thus, the scales were considered interval. These content areas have specific questions that equate to specific soft skills behaviors (see Appendix C). Using the literature and theoretical framework, a key set of soft skills behaviors were identified.
Pike Engagement Scalelet

According to Pike (2006a, 2006b), his scalelets represented experiences of groups of students rather than individuals. Group data provided more understanding of experiences of many students and how those experiences move students toward attainment of educational and personal goals. Pike (2006a) also stated “evaluating the quality and effectiveness of a program requires that an assessor make generalizations about the effectiveness of a program based on a sample of questions about a program.” (p. 552). Pike’s (2006a) study using NSSE data supported broad judgment about student engagement. The gains in soft skill scalelets allowed the researcher to look at engagement activities and potential effects on the gain in soft skills as a result of engagement activities (see Appendix D).

Conflicting Research

The literature review provided few nursing scholarly studies addressing soft skills. Attempting to find conflicting research proved to be difficult. However, a few articles suggested the “soft” skill of nursing was underrated and that the idea nurses are “soft” undermines the reliability of the nursing profession. Nursing is a highly complex discipline. The study in reference was an editorial with no scholarly evidence.

The lack of literature surrounding soft skills required more analysis. The limited scholarly studies led this researcher to determine nursing was calling soft skills something different. Using the large conceptual themes of critical thinking, ethical decision-making, communication, and interpersonal behavior, large quantities of research were found. These soft skills concepts (critical thinking, ethical decision-making, and interpersonal communication) were well-researched independently; yet clustered as a group of behaviors, the studies are almost nonexistent. The lack of
research on these clustered behaviors (soft skills) leads one to question why other
disciplines are evaluating these concepts (soft skills) together as a core set of skills and
nursing is not.

Other researchers differ about which skills should be included in soft skills, but
what they all agreed upon was the need for the “other” skills, thus soft skills, for leaders
in nursing and other disciplines. Soft skills, for the purpose of this study, were more
than the key tenants of emotional intelligence. After reviewing countless articles and
studies, many concepts were similar but were not leadership traits. Emotional
intelligence is the management of emotions. Emotional intelligence is an internal
process that focuses on the individual’s ability to self-regulate (Mayer & Salovey,
1997). Understanding emotion and how one functions in the world are important for
any leader, but caring leadership is more complex. Soft skills are more robust than just
the intelligence to manage emotion. Soft skills move the leader to actually influence
and make change.

Summary

This literature review considered extensive amounts of literature as it applied to
soft skills in education and practice. This literature review provided useful definitions
of soft skills that provide a working framework for this research. A thorough
understanding of soft skills across disciplines was gained to provide guidance when
exploring nursing contexts for soft skills acquisition. The evaluation of all resources
established that more research is needed that explores soft skill gains in nursing. The
majority of articles surrounding soft skills lacked the depth and breadth of scholarly
research. This lack of scholarly research supported the need for this study and its
contributions to nursing science.
CHAPTER III

METHODOLGY

Purpose

This chapter outlines the processes used to develop and implement this research study. The first part of this chapter defines the NSSE data used in this study. Then the second part of the chapter defines the gain and engagement scales (Britton, 2013; Pike, 2006b), specifically addressing these scalelets’ reliability and validity. The final section explains the operationalization of engagement. The operationalization of engagement explored the research design, data collection methods, study sample, study reliability, study validity, and data analysis processes.

The use of secondary research (NSSE data) provided a sample of student engagement from national participation of colleges and universities. Human subjects’ approval was granted and expedited review approval was obtained from The University of Southern Mississippi Institutional Review Board (IRB) (see Appendix E), and a data sharing agreement was obtained from the Indiana University Center for Postsecondary Research (NSSE) (see Appendix F). All identifiable student characteristics and institutional information from the NSSE data file were stripped from the data set, which allowed for minimal review. This research created minimal risk since no identifiable human subjects or institutions were used (National Institutes of Health, 2014; National Science Foundation, 2014).

NSSE Data

NSSE is a survey disseminated annually by participating 4-year institutions (Kuh, 2001b). NSSE collects information on “freshman year and senior students about the characteristics and quality of their undergraduate experience” (NSSE, 2014, para.
1). Students self-report the amount of time and effort put into their studies and educational activities during their college experience. In the 2014 dissemination of the NSSE survey, 1.8 million students were invited to participate. Of the participants invited, 473,633 responded, with 46% representing first-year students and 54% representing senior-year students.

**NSSE Descriptives**

The NSSE is administered at schools across the United States and Canada. For the purpose of this study, only data from the United States were used. NSSE (2014) identified the schools that are ranked using the Carnegie classification system. The Carnegie Foundation for the Advancement of Teaching has a classification system for colleges and universities that is used widely for policy and research purposes (defined as Carnegie Peers). NSSE identified colleges and universities that meet the same Carnegie criteria based on private or public university, enrollment numbers, student demographics, and degree programs. This survey was distributed to institutions that pay to participate in the survey. The survey was disseminated to freshman and senior students in education settings. Majors represented by NSSE included arts and humanities, biological sciences, business, education, engineering, physical science, professional, social science, other, and undecided. Engagement was examined through a variety of activities the student participated in during the college experience. Specific topics focused on the degree to which students actively participated in the opportunities for engagement provided by their universities (Kuh, 2001a; Pike, 2006b; Popkess & McDaniel, 2011). Each university may be slightly different, but the large sample from multiple universities provided a high-level glimpse into student engagement on a national level.
The NSSE data set provided cross-sectional responses from a large sample of nursing students from various baccalaureate programs. Nursing was one of the majors identified in the study. Students self-report a major at both the freshman and senior years. The NSSE survey is not specific to nursing, but the broad academic encounters of students examining all aspects of the college experience. Choosing the nursing major was more central to this study than choosing any particular type of institution. This research was not intended to highlight any one type of nursing program or methodology but nursing education as the collective whole.

NSSE Sample

NSSE’s sampling methodology calls for a sample of the first- and senior-year students based on total undergraduate enrollment. The NSSE sample included participants from 638 institutions throughout the United States. Of the institutions that participated in the NSSE survey, 633 delivered the survey in an electronic version. NSSE distributes an email or regular mail invitation to the survey based on the institutional preference. NSSE strongly recommends electronic surveys. The potential participant receives three reminders (either electronic or regular mail) with a final reminder to participate in the study. The overall survey response rate is 33%.

Institutions that participate in the NSSE survey must adhere to the NSSE institution participation agreement. Participating institutions that use the NSSE survey rely on a variety of methods to recruit participants in response to institutional need. The NSSE participation agreement “outlines IRB terms for recruiting and protecting study participants, cost information, and NSSE’s commitment to keeping institutions results confidential” (NSSE, 2014, para. 2).
NSSE Survey

The NSSE design provided cross-sectional, panel data to survey students at two points in time (freshman and senior years). The NSSE study elicited responses from students using a 4-point Likert scale to evaluate engagement at key points during the collegiate experience. This Likert scale asks the students to identify how often they engaged in a particular activity from very often, often, sometimes, and never. The survey has a total of 24 questions, excluding demographic questions, with each question having a range of sub-questions from 3 to 11. Ten total constructs are measured with the survey, which include advising, civic engagement, development of transferrable skills, experience with diverse perspectives, learning with technology, experiences in writing, experiences with information literacy, global perspectives, and freshman- to senior-year transition (NSSE, 2014).

NSSE Reliability and Validity

Validity is important to consider when evaluating any tool. The NSSE tool draws inferences from the evidence (student responses)—not the survey itself. NSSE specifically addressed the validity of the data collected through multiple tests of validity on the overall data set. NSSE data team defined content validity as “the extent to which a measure represents all the facts of a given scale or construct” (NSSE, 2014, para. 4). Evidence was collected to support content validity through the use of experts—not a statistical test. In addition to the use of experts, NSSE used focus groups to ensure that the survey instrument is valid, and cognitive interviews were used to provide evidence of tool consistency (Kuh, 2001a; NSSE, 2014).

Evidence of construct, concurrent, and predictive validity were collected through statistical tests. Multiple learning theories guided the statistical tests used to
investigate the validity of NSSE data. Through these statistical tests, validity was established for the national survey. Factor analysis was conducted on the data obtained from administering the NSSE. Using factor analysis determined whether the data supported the constructs associated with the deep learning theory (NSSE, 2014). Deep learning theory is based on the premise that students use different approaches to learning with those learning outcomes closely associated with the different learning approaches. Students tend to use one learning approach based on personal characteristics and continue to use it as a way to learn (Laird, Shoup, & Kuh, 2008).

The NSSE data team used the deep learning theory as framework. A random sample of students was evaluated using exploratory factor analysis to provide evidence of validity. Factor analysis provided a factor structure that would emerge from analysis of the data. The analysis was completed separately for first-year and senior-year students. The exploratory factor analysis results were from a 3-factor solution. The three factors cumulatively explain nearly 60% of the variance in the 12 survey items for both the first- and senior-year models. The component correlations also demonstrated that the three factors were moderately related (Laird et al., 2008; NSSE, 2014).

The NSSE design team investigated reliability of data obtained from administration of the NSSE through internal consistency, temporal stability, and equivalence analyses (NSSE, 2014). The design team explored internal consistency by measuring the homogeneity of groups of items. In other words, do the items correlate well with each other? To analyze internal consistency, a Pearson’s $r$ was computed using the five NSSE benchmarks comparing scores from year-to-year. Correlations were .725 in the freshman responses and .925 in senior responses. The correlations were slightly higher for seniors than first-year students. This increase may have been
attributable to the fact that the senior year is the second time the students have seen the survey (NSSE, 2014).

Operationalization of Constructs

The goal of this study was to explore soft skill gain acquisition during engagement in a BSN program. This section will describe the steps to explore soft skill acquisition. The first step was to compare soft skill gains between freshman and senior responses obtained from NSSE survey administrations (2004-2007 and 2007-2010). An exploration of the data was conducted to determine if there is a change in soft skills scores after engagement in nursing BSN programs.

Scalelets of Soft Skills and Gains

Britton Soft Skills Scalelet. Britton (2013) created the soft skill scalelet to measure the degree to which students report having made gains in three critical skills: interpersonal communication, critical thinking, and ethical behavior. The Britton Soft Skills (2013) scalelet was created from the works of Pike (2006a, 2006b) and the Learning Skills Profile (LSP) (Stumpf, 2007). To evaluate the validity of the Soft Skills Scalelet, Britton (2013) used a random sample of freshman and senior responses from the NSSE survey administration. Britton (2013) conducted a three-step regression analysis to determine convergent and discriminant validity of the soft skills scalelet. Britton’s (2013) doctoral research confirmed the relationship between the three constructs (critical thinking, ethical behavior, and interpersonal communication).

Reliability and internal consistency of the Britton Soft Skills Scalelet was evaluated by testing the consistency and stability of the scalelet. Cronbach’s alpha coefficients for first-year scale scores ranged from .812 to .866. The senior Cronbach’s alpha coefficients were also reassuring as they ranged from .816 to .852 (Field, 2009).
Pike Scalelet for Engagement. As mentioned in Britton’s research, the Pike Scalelet for Engagement was a model for the development of Britton’s Soft Skill Scalelet. Pike (2006b) tested for convergent and discriminant validity with regression analysis and regression coefficients to provide significance of relationships between scale measures. Reliability was confirmed by Cronbach alpha.

Study Data

The NSSE survey allowed students to identify specific types of educational institutions based on size, degree offered, and research conducted. Initially, this method seemed the best way to manage the data to evaluate it by educational institution. However, after working with the NSSE data team, it appeared the best method was to use the (nursing) and match the data to first-year and senior-year respondents. Matching the data ensured that the responses from freshman year and senior year came from the same students and that they were nursing majors. While this research cannot account for the effects of the school specifics (which may or may not affect the sample), it was a tradeoff in order to ensure accuracy and precision of the sample to include nursing majors who participated in the survey during freshman and senior years. Inclusion criteria for the data set included students who had answered all questions and identified themselves as a nursing major in their senior year.

Final Data Set

To explore if there are gains in soft skills after participation in a BSN program, two historical points in time were chosen. To determine stability between groups and survey years, freshman data from the 2004-2007 survey were compared with senior data from 2007-2010. Examination of the instrument from year-to-year was conducted to ensure the questions were the same from administration to administration of the survey.
Once this examination was completed, the freshman and senior data sets were combined into a new data set, which was identified as final data set.

The data set for this study was prepared in collaboration with the NSSE Institutional Research (IR) department. To identify the correct sample, all students who self-identified as having a nursing major (58) in either the minor or major category of the survey were selected. The NSSE IR department paired freshman students who participated in the 2004-2007 NSSE survey administrations with their senior responses from 2007-2010 NSSE survey administrations. This pairing produced a data set specific for this research ($n = 1,790$).

The next step in creating the final data set was to develop syntax to eliminate cases with missing data. Eliminating data was not done arbitrarily and without considering possible bias it would produce. As soft skill and engagement were the focus of this study, participants who did not have a score for these variables were eliminated. The NSSE survey was voluntary, and it could not be determined (with the data set provided) why the students had missing data. Therefore, all participants with missing data on any of the soft skill or engagement variables were eliminated from the study which resulted in 1,680 subjects.

The next step was to explore the “major” variable. The NSSE survey provided questions for this variable on the survey. Students designated a primary and secondary major. The responses were evaluated at the freshman and senior administration. The initial data set included data from all respondents who had nursing in either major designation. This was an area of concern to the validity of the study. Ensuring that the data set represented nurses and not any other major was important. To refine the data further and ensure the sample was true to nursing major variable, frequencies were run
on the specific variables (majrprim, majrprim_SR, majrsocl, majrsol_and SR). These frequencies produced cases with majors other than nursing. In an effort to reduce error of the sample, only senior cases where the primary major was nursing (majrprim_SR) were selected with corresponding freshman results. These exclusion criteria provided a data set with no missing data and students who were clearly identified as nurses. Only respondents who identified themselves as a nursing primary major in the senior year were included. After review of the data, it was unclear if several cases were actually nursing students. The risk that non-nursing seniors were in the data was decreased by eliminating these participants. This provided the final data set ($N = 1,101$).

**Study Validity and Reliability**

Exploration of the NSSE surveys from year-to-year were reviewed and analyzed to ensure the survey questions were consistent from year-to-year. This review revealed all versions of the NSSE instrument were similar. To evaluate reliability of the data, a Cronbach’s alpha was calculated on all scalelets. The reliability test was conducted at the freshman, senior, and combined years.

Validity of the instruments was conducted to ensure the survey instruments were consistent from year-to-year. Examination of the questions across each of the years of administration was a way to ensure content validity. For example, the 2007 version of the NSSE instrument is consistent with the 2008, 2009, and 2010 versions of the NSSE instrument. This analysis was conducted to ensure measurement at the same or similar constructs across all versions of the NSSE instrument and that all instruments asked the same questions (NSSE, 2014).
To ensure study reliability, several analyses were conducted in SPSS using the final data set. All inferential tests were conducted with level of significance at 0.05 (alpha). All data sets were analyzed using SPSS, Version 22.0.

Data Analysis

*Descriptive Statistics*

Descriptive analysis was utilized to describe the central tendency and dispersion of each of the scalelet scores used in data analysis related to the research questions. The chosen measures of central tendency for this study included the mean of each scalelet.

The underlying assumptions of the methodology used in this study were reviewed. For RMMANOVA, the key concerns were related to the assumptions of normality, homogeneity of variance, and sphericity (Field, 2009). In this repeated measures design, only two data points were used. As a result, the assumption of sphericity did not apply as it applies to designs with three or more observations. SPSS provides a test for homogeneity of variance; however, this test only applies to designs in which two or more groups are being compared. This study did not focus on group differences; therefore, no tests of homogeneity were conducted.

The most significant threats to the assumptions were that the data would be normally distributed. Violations of normality, for the purpose of this study, could alter the results and produce either a Type I or Type II error (Field, 2009; Garson, 2012; Kessleman et al., 1998; Wilcox, 1998). Before any inferential tests were conducted, a Shapiro-Wilks test of normality was done to determine if the variables were normally distributed. Where non-normality was observed based on the Shapiro-Wilks test, the distributions of the data were evaluated by manually exploring the boxplot and histograms for all scalelet scores (the soft skills and engagement variables). The
normality test alone is not enough to reject normality. Exploring the data, specifically looking at the outliers, provides a better picture of normality.

Before completing transformation, the “rule of thumb” based on Field’s (2009) statistical works for kurtosis and skewness was evaluated as it applies to this data set. To calculate the “rule of thumb,” the skewness and kurtosis statistics were divided by the standard error (Garson, 2012). For the skew and kurtosis, the range should be within a range of +2 to -2 (Field, 2009; Garson, 2012). If the calculations fit within this range, then the data can be treated as normally distributed. Some authors debate if +2 to -2 is too wide a range and prefer to use +1 to -1 (Field, 2009; Garson, 2012).

Outliers are common in applied research. Outliers are important because they can provide valuable data about the sample. Unfortunately, outliers can also inflate the standard error of the sample mean (Wilcox, 1998). These outliers shift the distribution (for this study it was shifted to the left) and have a large impact on the mean. In the presence of outliers, trimming the data has been suggested as a way to eliminate Type I and Type II errors (Kessleman et al., 1998; Wilcox, 1998). The most common issue with data can be outliers; trimming provides the best choice to find a balance between probability coverage while avoiding low power of the sample (Wilcox, 1998). This abnormality does not necessarily equate to problems with the data. However, addressing the non-normality was imperative to the extent it was possible to evaluate that non-normality did not affect the significance tests.

Central limit theorem provided an assumption that if the sample is large enough, then the assumption of normality is not a concern (Field, 2009). The central limit theorem was not enough to apply to the non-normality of the data. Howell (2007) described the need for researchers to look at data before and after transformation to
ensure that both results are telling the same story. A deeper analysis of the variables was conducted.

Three methods were used to attempt to compensate for the lack of normality in the variable scores. The first step was to trim approximately 10% of the data to eliminate extreme outliers (Field, 2009; Kesselman et al., 1998; Wilcox, 1998). Additionally, all studied variables (Britton Soft Skills and Pike Engagement) were log-transformed and square root transformed to respond to the negative skewness and kurtosis (Field, 2009). Evaluation of normality was repeated after transformation and trimming and used to evaluate the appropriate version of the scalelet variable to use in the subsequent analyses. RMMANOVA also assumes that normality is observed in a multivariate sense; however, since univariate normality was not demonstrated, no test of normality was included. The assumptions associated with partial correlation were similar; therefore, no additional tests were required (Field, 2009; Waltz, Stricklan, & Lenz, 2005).

One last area of concern was the ceiling effect of the data. The ceiling effect occurs when a measure has a distinct upper limit and the responses are concentrated near or at that upper limit (Beck, Bryman, & Liao, 2004). Often with biomedical or social science research ceiling effects are present (Austin, 2003). In the case of this study, a large number of subjects had upper limit scores in the freshman and senior years. The “ceiling effect” is the variation of the data reflected on the high scores of the instrument (Austin, 2003; Beck et al., 2004; Field, 2009). This effect was acknowledged and noted when analyzing the research and will be explored further in Chapter V.
To answer Research Question 1, a RMMANOVA was conducted to compare potential differences in soft skill gains (means) between freshman and senior years (remember you have the same people in both years) to determine if there were any increases (in said means) from enrollment in a BSN program. Since the Britton (2013) soft skills scalelets were correlated, the multivariate approach is most applicable for comparison purposes. Repeated measures were appropriate as the students were taking the same survey at two points in time. The differences in mean scores were tested for statistical significance and evaluated for gains or losses. This study utilized paired data; therefore, a RMMANOVA was used.

Partial Correlation

Research Question 2 was answered using a partial correlation approach. Partial correlation was chosen to explore for any association between key engagement indicators and soft skill behaviors. Using partial correlation, one is able to partial out one variable that can be explored without the influences of the other variable. This methodology partialed out the influence of each of Britton’s (2013) soft skills to explore for relationships with Pike’s (2006b) engagement scales. Associations are at the variable level; therefore, each soft skill was analyzed separately, controlling for the other two soft skills (Field, 2009). Pike’s (2006b) Engagement Scalelet (gain scores) was used with the Britton Soft Skills Scalelet (gain scores) to ascertain if scalelet impacted the soft skill scores. The correlation was used to determine if any subscale from the engagement indicators has a linear relationship with the soft skills matrix. Thus, looking for correlation in the gain scores was important in evaluation of the matrices. The design of this study did not show causation but merely examined if a
relationship exists between soft skills and engagement indicators. If a relationship did exist, is it a positive or a negative relationship between the gains in soft skills and gains in engagement indicators.

Summary

This research study consisted of three distinct phases of analysis: descriptive, RMMANOVA, and partial correlation. This chapter outlined the processes used to develop and implement this research study. The first section of this chapter defined the NSSE data used in this study. The second section of this chapter defined the gain and engagement scales (Britton, 2013; Pike, 2006b), specifically addressing these scalelets’ reliability and validity. The final section outlined the operationalization of the study. Exploring the data using descriptive analysis, RMMANOVA and partial correlation provided the necessary steps to study soft skill acquisition (gains) in baccalaureate nursing education.
CHAPTER IV
ANALYSIS OF DATA

Restatement of the Problem

This research study was designed to explore gains in soft skills and key variables that may correlate with soft skill acquisition in baccalaureate nursing education. The literature in Chapter II revealed the necessity for soft skill development in nursing education to prepare nurses for the leadership roles of BSN nurses. The reviewed literature highlighted the need for more scholarly research with soft skill development in BSN nursing programs. This chapter presents the analysis of the data collected from the NSSE survey.

Descriptive Data Analysis and Results

Demographics

The first step in analysis was to define the data set by using descriptive statistics. These initial analyses included frequencies and percentages to describe, analyze, summarize, and organize the relationship of the variables. All descriptive data were run using SPSS, Version 22. The final data set demographics consisted of 93% women and 7% male. When exploring the age, an inconsistency was identified. The freshman data had inconsistent ages that included 1, 2, or 3 instead of the actual age of the student. The senior data did not have this anomaly. Consultation with the NSSE data team confirmed there was an error on the reporting of the ages in freshman year data set. The NSSE data team confirmed the senior year ages were accurate. The mean age for the senior data was 22.6 (SD = 4.6). Descriptive analysis was completed on the Soft Skills Scalelet. Table 1 presents the descriptives from these varies when comparing freshman to senior year.
Table 1

Soft Skill Descriptives

<table>
<thead>
<tr>
<th>Year</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical thinking</td>
<td>21.12</td>
<td>3.89</td>
<td>.117</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>Interpersonal communication</td>
<td>8.90</td>
<td>2.11</td>
<td>.063</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Ethical behavior</td>
<td>12.79</td>
<td>3.53</td>
<td>.106</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Senior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical thinking</td>
<td>23.17</td>
<td>3.70</td>
<td>.111</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>Interpersonal communication</td>
<td>9.20</td>
<td>2.00</td>
<td>.060</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Ethical behavior</td>
<td>13.92</td>
<td>3.51</td>
<td>.106</td>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>

Normality

A three-step approach to the evaluation of normality was conducted. The first step was to conduct the Shapiro-Wilks test on each of the key variables in the study. All of the variables explored (soft skills and engagement) failed the Shapiro-Wilks test. As a result, the second step in the analysis involved a visual examination of the skewness and kurtosis statistics for each key variable. Soft skills (Britton Scalelet) variables had the most issues with skewness and kurtosis. The range of skewness for
soft skill variables (between freshman year and senior year and gains scores) ranged from -.025 to .202 and kurtosis -.190 to .283. When exploring the need to transform the engagement indicators (Pike Scalelet), no transformation or trimming was necessary. Analysis of the engagement scales indicated the data had minimal skewness and kurtosis. Based on the “rule of thumb,” the data were not transformed. The soft skill and engagement variables were examined and found to meet the criteria of the normality.

While none of the skewness and kurtosis values observed were outside the boundaries established by Field (2009), concerns remained that outliers could have a detrimental effect on the analysis. Therefore, a visual examination of the histograms and boxplots for each of the variables was conducted as the third step in the analysis. The visual examination of the soft skills and engagement variables showed extreme outliers. Apparent outliers affected all the three soft skills scalelet scores. Boxplots for these variables showed extreme outliers above the 25th quartile. The range of outliers was from 3 to 20 cases per variable. Examining the histograms provided an image of cases near the maximum scores of each soft skill variable. Additionally, score patterns observed (i.e., negative skewness, bunching of scores at the upper end of the scale) suggested that potential ceiling effects might be affecting the variable distribution.

Three methods were used to deal with the observed non-normality in the soft skill variables. Logarithmic transformation was conducted, and tests for non-normality were repeated on the transformed variables. The Logarithmic transformations did not help the non-normality. The Shapiro-Wilks test was conducted on the transformed scores, and the hypothesis of normality was rejected. Skewness and kurtosis scores were worse for the soft skill variables after transformation, with skewness ranging from
-.517 to -.450 and kurtosis from -.556 to -.300. Square-root transformation had similar results as Logarithmic did with the soft skills variables, resulting in a range of -.556 to .050. In some cases, the skewness and kurtosis doubled using this transformation.

The final method used was to trim the data. Trimming was completed on the soft skills variables, and the Shapiro Wilks test still failed. The trimmed data set resulted in an elimination of cases. Approximately 10% of the cases were eliminated with the trimming of outliers. Frequencies were completed on both sets trimmed/transformed data. The soft skill variables (untrimmed) skewness and kurtosis scores ranged from -.064 to .033. No differences in the skewness or kurtosis for the trimmed values were noted. The engagement variable scores remained unchanged whether they were trimmed or untrimmed. The range for untrimmed scores was for skewness and skewness (-.025 to .202) and kurtosis (-.190 to .283). As expected, based on the observed skewness and kurtosis statistics, the boxplots and histograms for the engagement variables after trimming suggested that these variable distributions were more normal in shape and had very few outliers.

Reliability and Validity

Reliability analysis was conducted on each scalelet using a Cronbach alpha. The expected estimate of reliability on each scalelet was 0.7 or higher (Field, 2009). The Britton (2013) Scalelet for Soft Skills had a score of .826 for freshman year and .831 for senior year. Reliability tests for engagement were conducted using the same formula as the soft skill reliability tests. Listed below are the results for both scalelets at freshman and senior years (see Table 2).
Table 2

Reliability of Scalelets According to Freshman and Senior Classification

<table>
<thead>
<tr>
<th>Scalelet</th>
<th>Freshman</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft Skills Scalelet (Britton, 2013)</td>
<td>.826</td>
<td>.831</td>
</tr>
<tr>
<td>Engagement Indicators (Pike, 2006)</td>
<td>.699</td>
<td>.710</td>
</tr>
</tbody>
</table>

Research Questions

Analyses for both questions were accomplished with trimmed and untrimmed data (RMMANOVA and Partial correlation). All analyses were completed twice to check for accuracy and consistency using the trimmed and untrimmed data. The following section discusses the results for trimmed and untrimmed data.

Research Question 1

What are the gains in soft skills that result from engagement in BSN education?

To answer Research Question 1, gain scores needed to be computed. Using the soft skill variables from freshman year and senior year, syntax was developed to explore for gains or losses between the 2 years of engagement. Table 3 represents the gains in soft skills from freshman year to senior year.
A positive change from freshman to senior year in the soft skills behaviors was noted. All three soft skill behavior scores increased from freshman year to senior year. Of these gain scores, interpersonal behaviors had the smallest gain. After visual inspection, a RMMANOVA was conducted to test for significance in soft skills. 

Table 4 represents the RMMANOVA results. The significance level of Wilks’s Lambda for the effect of time was .000. A significance value where $p < .05$ suggested that time was significantly dependent on gains in soft skills. In summary, in relation to Research Question 1, there was a gain in soft skills from freshman year to senior year. The Partial Eta Squared indicated a significant relationship between time and soft skill gains. The trimmed scores when analyzed showed no difference in significance between the untrimmed scores. The Wilks’s lambda and Partial Eta Squared were significant with the trimmed scores.
Table 4

*RMMAANOVA Results*

<table>
<thead>
<tr>
<th>Effect squared</th>
<th>Value</th>
<th>F</th>
<th>df</th>
<th>Hypothesis</th>
<th>Error df</th>
<th>Sig</th>
<th>Partial eta</th>
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</thead>
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<tr>
<td>Wilks’ lambda</td>
<td>.82</td>
<td>80.1</td>
<td>3.00</td>
<td>1098.0</td>
<td>.0</td>
<td>.180</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.180</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>29.0b</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotelling’s trace</td>
<td>.21</td>
<td>80.1</td>
<td>3.00</td>
<td>1098.0</td>
<td>.0</td>
<td>.180</td>
<td></td>
</tr>
<tr>
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<tr>
<td></td>
<td>9</td>
<td>29.0b</td>
<td>0.0</td>
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<tr>
<td>Roy’s largest root</td>
<td>.21</td>
<td>80.1</td>
<td>3.00</td>
<td>1098.0</td>
<td>.0</td>
<td>.180</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>29.0b</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Computed using alpha = .05.  
* Exact statistic.

**Research Question 2**

*What are the correlations between specific NSSE benchmarks and perceived gains in soft skills?* Using the gain scores that were created from the Britton (2013) scalelet, another set of variables was created using the Pike (2006b) engagement indicators. These variables were engagement activity students participated in during baccalaureate education. The goal of Research Question 2 was to explore for activities that may correlate to gains in soft skill behaviors. Pikes (2006b) engagement scalelet
provided the perfect tool to examine for correlations. This tool had been a tool utilized in previous research studies. The previous work Pike (2006a, 2006b) conducted provided data that this scalelet would be a good choice to measure correlations.

Research Question 2 explored if any engagement indicators (NSSE benchmarks) could be correlated to soft skills. The partial correlation was important for Research Question 2 to explore for engagement indicators that were specific not just to the Britton (2013) scalelet but each separate soft skill behavior. As stated in Chapter II, the soft skill behaviors on the Britton (2013) Soft Skills Scalelet are intercorrelated. Using a one-variable approach would provide a picture of the relationship between soft skills and engagement indicators. Partialing the soft skills out with the engagement indicators provided a more holistic description of the relationship between engagement and soft skills. Partialing the data was the best scenario to explore for engagement indicators. For example, if variable x (Pike’s varied experiences scale score) is related to variable y (Britton’s gaincrit), both are also related to variables z1 (Britton’s gaininter) and z2 (Britton’s gainethic). This analysis completed a simple correlation between x and y and ignored z1 and z2, but the estimate of the correlation was biased. Therefore, a partial correlation was to “control for z1 and z2” in this analysis of variables (Field, 2009).

A partial correlation was conducted with the soft skill gains scores and engagement gain scores. The table below describes the relationship between Pike’s (2006b) engagement indicators and Britton’s (2013) soft skills behaviors. The relationship between Pike’s engagement indicator gains scores (all of them) and Britton’s gaincrit score were completed, controlling for gaininter and gainethic. The next procedure was to correlate the gains in Pike with gains in Britton. Table 5
describes the correlation results of the trimmed and untrimmed data. The bold type identifies correlations that changed as a result of trimming the data.

Table 5

*Partial Correlation Engagement Gains Soft Skills Untrimmed and Trimmed Data*

<table>
<thead>
<tr>
<th>Gain scores</th>
<th>Varied experiences</th>
<th>Information technology</th>
<th>Diversity</th>
<th>Course interactions</th>
<th>Out-of-course interactions</th>
<th>Support for student success</th>
<th>Interpersonal experiences</th>
</tr>
</thead>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>.013</td>
<td>.165</td>
<td>.030</td>
<td>.117</td>
<td><strong>.073</strong></td>
<td>.089</td>
<td>.135</td>
</tr>
<tr>
<td>Sig (2tailed)</td>
<td>.678</td>
<td>.000</td>
<td>.323</td>
<td>.000</td>
<td><strong>.015</strong></td>
<td>.003</td>
<td>.000</td>
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<td>1097</td>
<td>1097</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>.023</td>
<td>.202</td>
<td><strong>.047</strong></td>
<td><strong>.078</strong></td>
<td>.252</td>
<td>.134</td>
</tr>
<tr>
<td>Sig (2tailed)</td>
<td>.086</td>
<td>.102</td>
<td>.000</td>
<td><strong>.116</strong></td>
<td><strong>.010</strong></td>
<td>.000</td>
<td>.000</td>
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<tr>
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<tr>
<td>Correlation</td>
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<td><strong>.666</strong></td>
<td>.070</td>
<td><strong>.084</strong></td>
<td><strong>.014</strong></td>
<td>.120</td>
<td>.115</td>
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<td>Sig (2tailed)</td>
<td>.002</td>
<td>.029</td>
<td>.020</td>
<td><strong>.005</strong></td>
<td><strong>.144</strong></td>
<td>.000</td>
<td>.000</td>
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<td>.113</td>
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<td>.087</td>
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<td>Sig (2tailed)</td>
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<td>.000</td>
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<td>.056</td>
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<td>.135</td>
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<tr>
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<td>.091</td>
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<tr>
<td>Correlation</td>
<td><strong>.029</strong></td>
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<td>.181</td>
<td>.041</td>
<td>.081</td>
<td>.217</td>
<td>.148</td>
</tr>
<tr>
<td>Sig (2tailed)</td>
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<td>.000</td>
<td>.188</td>
<td>.009</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
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</tr>
</tbody>
</table>

Note. The highlighted scores note the changes in correlations from untrimmed to trimmed variables. $p > .05$. 
The partial correlation analysis was conducted to identify correlations between Pike’s engagement indicators and each component on Britton’s (2013) Soft Skills Scalelet, controlling for the other components. In other words, was there engagement indicators correlated to soft skills? The partial correlation provided clarity in what engagement indicators were correlated to which specific soft skills. There were several engagement indicators where significant correlation was identified.

At least one significant correlation was present in all soft skills behaviors. Using the untrimmed soft skill scores, gains in critical thinking were significantly correlated to gains in information technology ($p = .000$), course interactions ($p = .000$), out-of-course interactions ($p = .015$), support for student’s success ($p = .003$), and interpersonal experiences ($p = .000$). The interpersonal behavior gain scores were significantly correlated to diversity, out-of-course interactions, support for student success, and interpersonal experiences. The final correlation analysis was with the ethical behaviors and Pike’s engagement indicators these scores were significantly correlated to varied experiences, information technology, diversity, course interactions, support for student success, and interpersonal experiences. No one soft skill was correlated to all engagement indicators.

When the trimmed scores were used, gains in out-of-course interaction ($p = .174$) was no longer significantly related to gains in critical thinking. Interpersonal behaviors were no longer correlated to out-of-course interactions ($p = .432$) but now correlated to varied experiences ($p = .010$). Finally, ethics was no longer correlated to varied experiences ($p = .346$) and information technology ($p = .954$) and course interactions ($p = .188$) but was associated with out-of-course interactions. These findings suggested that correlations between engagement indicators and soft skills were
sensitive to the presence of outliers on the soft skill scalelet. Critical thinking and interpersonal behaviors were correlated to four indicators. Table 5 compared the correlation results between trimmed and untrimmed data. Engagement indicators that became significant after the data were trimmed were information technology, course interaction, and support for student success. Engagement indicators that were not significant after trimming the data were varied experiences, information technology, diversity, course interaction, and out-of-class interaction. The partial correlation analysis was sensitive to the outliers. Thus, trimming the data created a discrepancy between the engagement indicators.

Summary

This chapter outlined the analysis of the research study. Soft skill gains were noted from the freshman year to the senior year. In addition, soft skill gains correlation was significantly noted between soft skill behaviors and engagement indicators. Partial correlation provided information about the correlation of each soft skill behavior with the engagement indicators. There was no single soft skill behavior correlated to any single engagement indicator.
CHAPTER V
SUMMARY

Soft skills are fundamental for future nurses. Successful leadership demands a healthcare environment with nurses skilled in soft skills (Mitchell, 2008). This research study was designed to explore soft skill acquisition resulting from engagement in baccalaureate programs. In addition to exploring gains in soft skills, the study also examined the relationship between soft skill gains and NSSE engagement indicators. The literature review in this study highlighted the necessity for scholarly research in nursing science by exploring soft skills as it relates to gains in BSN education. The concepts of soft skills and engagement were explored and analyzed as key indicators for leadership development. The study also sought to identify behavioral engagement factors that occurred with soft skills gains. This chapter will highlight the findings, conclusions, and plans for future research.

Conclusions

This study successfully answered the following research questions:

1. What are the gains in soft skills that result from engagement in BSN education?

2. What are the correlations between specific NSSE benchmarks and perceived gains in soft skills?

Using the NSSE survey with two scalelets (soft skill behaviors and engagement indicators), gains in soft skill behaviors were identified. Correlations were also identified from key engagement behaviors after participation in BSN programs. This section will explain the findings and interpretations of the research study.
Findings and Interpretations

Research Question 1

What are the gains in soft skills that result from engagement in BSN education?

A gain in soft skill scores from the freshman year to the senior year was noted. The gains were statistically significant with an increase in the means of each of the three soft skill behaviors. The increase in the means ranged from .699 to 2.05. The highest gain was noted in critical thinking with a gain of 2.05, and the smallest gain was noted in interpersonal communication with a gain of .699. The maximum mean score for interpersonal communication was 15. Students presented at freshman year with a mean of 8.9 and at senior year with a mean of 9.2. The ceiling on the instrument was quite high. The goal of this study was to globally examine gains in soft skills in BSN students. The comparison of means was one way to evaluate gains in soft skills.

This comparison was a broad method to explore gains that lacked specificity. A more specific evaluation tool may provide a more robust exploration specific for gains as opposed to just comparing means for gains or losses. Specificity may provide a stronger conclusion on factors that contribute to the gains. The overarching question (which this study could not answer) was if students who are high in softs skills gravitate to nursing education or if this is an anomaly? Future exploration will be needed to study soft skills and nursing practice. Perhaps, a comparison to another discipline may answer this question. This study confirmed Britton’s (2013) study and recommendation for further study of soft skills.

Research Question 2

What are the correlations between specific NSSE benchmarks and perceived gains in soft skills? The purpose of this research question was to identify any
correlations between soft skill behaviors and engagement indicators. A partial
correlation was conducted to answer the question and correlations were identified. The
conclusions of this study were based on the findings that several engagement indicators
were statistically correlated to soft skill gains. A finding of interest was the difference
in correlation between trimmed and untrimmed data. The correlations changed with the
trimmed data. With the trimmed data, critical thinking was no longer significantly
correlated to out-of-course interactions. Interpersonal behaviors were no longer
significantly correlated with course interactions but became significantly correlated
with support for students. Finally, ethical behaviors gained information technology and
lost out-of-course experiences. The change in correlations will be explored in the
limitation section of this chapter as it may be an effect of tool sensitivity.

This study was not intended to show causation but merely if a relationship
exists. A positive relationship did exist with several indicators, while no correlation
existed with other indicators. The correlations were not consistent when outliers were
trimmed in the data set.

Limitations

Programmatic Limitations

Each nursing program may have different core themes and philosophies that
guide individual programs. Different types of nursing programs were not studied in this
research. Examining public versus private universities may provide more insight and
better discrimination about soft skill gains. Since curricula were not reviewed, one
cannot equate gains or correlations to specific types of nursing education.
**Tool Sensitivity**

The gains were present but cannot be explained by this study. This study highlighted the need for a more sensitive tool to measure soft skills in nursing education. There are more questions to ask at the end of this research than were answered, such as how the gains occurred. This study cannot determine if the gains came from the education process, enrollment in a nursing program, or a result of life experiences. All students were in a BSN program, but the tool cannot identify if these gains were because of the BSN education or just education as a whole. While gains were present, this study does not provide a clear reason for the gains. While this was not part of the study, further research should be conducted to explore if the gains were from any particular indicators.

**The Ceiling Effect**

The ceiling effect was present when NSSE data were analyzed for soft skill gains using the Britton (2013) Soft Skill Scalelet. This created a limitation in variability between freshman and senior years. There was no discrimination if students reported the highest score at freshman year and then reported the highest score during senior year. The ceiling effect was a limitation of the instrument design (NSSE). The study was still able to discriminate from the freshman to the senior year, but the upper limit scores may not have been represented in the final analysis.

**Participants**

This study does not link any data to a live person. The data, by nature of this design, was general. No data were linked to a specific school or student; the human factor of this research was absent. While the sample was large, it did not count for the human behind the answers to the survey.
Recommendations

This study provided one view of soft skill gains in baccalaureate nursing education. The study did not provide any data on predictors of soft skills. More research should be conducted specifically with regard to causation. One suggestion would be to replicate this study with other disciplines and compare gains by discipline. The nursing majors had high means of soft skills before gains scores were computed. The Britton (2013) Soft Skills Scalelet may not have been the correct tool to use for measuring nursing students. This scalelet was used for information technology students who may have different educational experiences from nurses. In addition to other degree majors, exploring soft skills in associate degree nursing programs would be helpful to look at the difference between associate and baccalaureate degree nurses.

The ceiling effect of this study led to more questions about the Britton (2013) Soft Skills Scalelet, Pike’s (2006b) Engagement Scalelet, and the NSSE Survey. The questions on the NSSE did not discriminate the level of ethics, critical thinking, and interpersonal communication that nurses are exposed to during nursing education. The NSSE questions were very broad. More specific, higher level questions may have provided a better view of soft skill gains without a ceiling effect. The goal of the study was to explore gains in soft skills. While this exploration was achieved, more research needs to be completed in the area of soft skills in nursing.

The partial correlation results provided interesting findings. The analysis was sensitive to outliers. The sensitivity brought about different results or correlations between the trimmed and untrimmed data analysis. This study cannot explain why outliers affected the results of the correlation analysis. Perhaps, development of a more specific tool for soft skills would provide better data on correlation. Future research
will need to be done to truly understand what behaviors may be linked with soft skill gains. A mix-method approach may be helpful to examine narratives, which can enrich quantitative study designs.

This study provided implications for nursing education and nursing practice. The research highlighted the importance of preparing students with soft skills in order to be the leader with patients and with peers. Exploring soft skills and how they can drive curriculum development and opportunities will be very important for nursing education. Exploring programs with strong soft skills reports and evaluating curricula, clinical training, and educational practices can help develop guidelines for other nursing programs to use to build a strong soft skill based program.

Further research is needed to move from association to causation. What predictors can be found to help drive changes in nursing education? The goal of this study was to contribute to nursing science. This study will provide more knowledge about soft skills in nursing. With the limited scholarly articles mentioned in Chapter II, this research was needed.

The goal of this study was to examine soft skill gains and engagement indicators. This study used an existing data set to provide a baseline study on the acquisition of soft skills in baccalaureate nursing education. Secondary research was strategically chosen as an effective way to use a national data set for specific evaluation of a population of interest. This data set was readily available and provided a large sample of nursing students with paired data. The NSSE data set provided a large sample of students from throughout the United States.

The study met its aim by providing evidence of gains in soft skill behaviors from freshman to senior years and correlations to specific engagement indicators. The
conclusions that can be drawn from this study were that students do gain soft skills in baccalaureate nursing programs and certain engagement indicators are present with these gains. These conclusions provided more questions than answers.

The lack of scholarly work in soft skills was noted in the literature review, has been highlighted throughout this chapter, and identified a definite need for future research, especially in soft skills. This study is the beginning of this healthcare professional’s research career and interests in nursing leadership, specifically soft skills and their relation to nursing education. Hopefully, this research study will help educators prepare students for nursing practice and emphasize the need for competence in these key leadership behaviors (i.e., critical thinking, ethical behaviors, and interpersonal communication).
### APPENDIX A

SOFT SKILLS CROSSWALK TO KEY BEHAVIORAL ATTRIBUTES

<table>
<thead>
<tr>
<th><strong>Interpersonal Communication</strong></th>
<th><strong>Critical Thinking</strong></th>
<th><strong>Ethical Behaviors</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal Behaviors-</td>
<td>Thinking and problems solving skills, analytical skills, application of knowledge, Honesty, ethics, etiquette, integrity, work ethic</td>
<td></td>
</tr>
<tr>
<td>Interpersonal skills, body language, selling skills, presentation skills</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Communication-Self efficacy, stress coping and motivation, group dynamics, team work, team building, diversity, organizational skills, motivation personality traits, personal habits, friendliness, people skills, negotiating skills, professionalism, cultural awareness
## APPENDIX B
### ANALYSIS OF SOFT SKILLS ATTRIBUTES TO CARING LEADERSHIP

<table>
<thead>
<tr>
<th>Communication/Interpersonal Behaviors</th>
<th>Critical Thinking</th>
<th>Ethical decision-making</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mayerhoff (1971)</td>
<td>Humility, hope, courage, patience</td>
<td>Knowing</td>
</tr>
<tr>
<td>McDowell &amp; Williams (2011)</td>
<td>Kindness, compassion, insight, reflection</td>
<td>Wisdom</td>
</tr>
<tr>
<td>Boykin &amp; Schoenhofer (1993)</td>
<td>Humanness, nurturing relationships</td>
<td></td>
</tr>
<tr>
<td>Watson (1988, 2009)</td>
<td>Kindness, supportive, authentic, genuine, spiritual</td>
<td></td>
</tr>
</tbody>
</table>
### APPENDIX C

BRITTON (2013) SOFT SKILLS SCALELET

<table>
<thead>
<tr>
<th>NSSE Questions</th>
<th>Soft skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>11a. Acquiring a broad general education</td>
<td><em>Critical Thinking</em></td>
</tr>
<tr>
<td>(GNGENLED)</td>
<td></td>
</tr>
<tr>
<td>11b. Acquiring job or work-related knowledge and skills (GNWORK)</td>
<td></td>
</tr>
<tr>
<td>11e. Thinking critically and analytically (GNANALY)</td>
<td></td>
</tr>
<tr>
<td>11f. Analyzing quantitative problems (GNQUANT)</td>
<td></td>
</tr>
<tr>
<td>11g. Using computing and information technology (GNCMPTS)</td>
<td></td>
</tr>
<tr>
<td>11j. Learning effectively on your own (GNINQ)</td>
<td></td>
</tr>
<tr>
<td>11m. Solving complex real-world problems (GNPROBSV)</td>
<td></td>
</tr>
</tbody>
</table>
11c. Writing clearly and effectively

(GNWRITE)  

Interpersonal Communication

11d. Speaking clearly and effectively

(GNSPEAK)  

11h. Working effectively with others

(GNOTHERS)  

11n. Developing a personal code of values and ethics (GNETHICS)  

Ethical Behavior

11k. Understanding yourself (GNSELF)  

11l. Understanding people of other racial and ethnic backgrounds (GNDIVERS)  

11i. Voting in local, state, or national elections

(GNCITIZN)  

11o. Contributing to the welfare of your community (GNCOMMUN)
**APPENDIX D**

**PIKE (2006) ENGAGEMENT INDICATORS**

*Enriching Educational Experiences*

<table>
<thead>
<tr>
<th>NSSE Questions</th>
<th>Varied Experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>7a. Have you or do you plan to participate in a practicum, internship, field</td>
<td></td>
</tr>
<tr>
<td>experiences, co-op experience or clinical assignment</td>
<td></td>
</tr>
<tr>
<td>7b. Have your do you plan to participate in community service or volunteer work?</td>
<td></td>
</tr>
<tr>
<td>7c. Have you or do you plan to participate in a learning community or some other</td>
<td></td>
</tr>
<tr>
<td>formal program where groups of students take two or more classes together?</td>
<td></td>
</tr>
<tr>
<td>7e. Have or do you plan to take foreign language coursework?</td>
<td></td>
</tr>
<tr>
<td>7f. Have you or do you plan to study abroad</td>
<td></td>
</tr>
<tr>
<td>7h. Have you or do you plan to participate in an independent study or self-designed major</td>
<td></td>
</tr>
<tr>
<td>7g. Have or do you plan to participate in culminating senior experiences</td>
<td></td>
</tr>
<tr>
<td>(comprehensive exam, capstone course, thesis, project etc.)</td>
<td></td>
</tr>
<tr>
<td>9d. How many hours a week do you spend participating in co-curricular activities</td>
<td></td>
</tr>
<tr>
<td>(organizations, campus publications, student government, social fraternity or</td>
<td></td>
</tr>
<tr>
<td>sorority, intercollegiate or intramural sports</td>
<td></td>
</tr>
<tr>
<td>10f. To what extent does your institution emphasize attending campus events</td>
<td></td>
</tr>
<tr>
<td>and activities.</td>
<td></td>
</tr>
</tbody>
</table>
Enriching Educational Experiences (cont.)

Information Technology

11. How often have you used an electronic medium

1m. How often have you used email to communicate with an instructor

10g. To what extent does your institution emphasize using computers in academic work.

Diversity

1u. How often have you had serious conversations with students of different race or ethnicity than your own

1v. How often have you had serious conversations with students who differ from you in terms of their religious beliefs, political opinions, or personal values

Student Interactions with Faculty

NSSE Questions

Course Interaction

Out of Class Interaction

1o. How often have you talked about career plans with a faculty member or advisor

1s. How often have you worked with faculty members on activities other than coursework

7d. Have you, or do you plan to work on a research project with a faculty member outside of course or program requirement
Supportive Campus Environment

NSSE Questions  Support for Student Success

10b. To what extent does your institution emphasize providing the support you need to help you succeed academically

10d. To what extent does your institution emphasize helping you cope with your nonacademic responsibilities

10e. To what extent does your institution emphasize providing the support you need to thrive socially

Interpersonal Environment

8a. Quality of your relationships with other students

8b. Quality of your relationships with other faculty members
APPENDIX E

INSTITUTIONAL REVIEW BOARD NOTICE OF COMMITTEE ACTION

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 38406-0001
Phone: 601.266.3907 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 15030302
PROJECT TITLE: A Measure of Soft Skill Gains Acquisition with Engagement in Baccalaureate Nursing Programs
PROJECT TYPE: New Project
RESEARCHER(S): Wendy Buenzli
COLLEGE/DIVISION: College of Nursing
DEPARTMENT: Systems Leadership and Health Outcomes
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Exempt Review Approval
PERIOD OF APPROVAL: 12/05/2014 to 12/04/2015
Lawrence A. Hosman, Ph.D.
Institutional Review Board
APPENDIX F

NSSE DATA SHARING AGREEMENT

This Indiana University Center for Postsecondary Research Data Sharing Agreement ("Agreement") defines the parameters for data sharing from the National Survey of Student Engagement ("NSSE") between the Research Institution and its Authorized Researchers named below and the Trustees of Indiana University on behalf of the Indiana University Center for Postsecondary Research ("IUCPR"). The terms below are intended to reflect and comply with the existing agreements between NSSE and the institutions that participate in the survey program. Under these participation agreements, NSSE may:

"...make data, in which individual institutions or students cannot be identified, available to researchers interested in studying the undergraduate experience... NSSE results specific to each institution and identified as such will not be made public except by mutual agreement between NSSE and the institution."

RESEARCHERS

The following researchers ("Authorized Researchers") of University of Southern Mississippi ("Research Institution") may make use of NSSE data pursuant to the terms of this Agreement:

Wendy Breenzie University of Southern Mississippi
Dr. Sheila Davis University of Southern Mississippi

DATA DESCRIPTION

Under this Agreement, IUCPR will provide the researchers a data file delimited in the following ways ("NSSS Data File"):  

- **Data Source:** The matched dataset of first-year students in 2004 to 2007 who also responded to the survey as seniors from 2007 to 2010.
- **Variables:** All survey items existing in 2004 and 2010. All student and institutional identifying information will be removed.
- **Cases:** Students who had nursing (~ 58) for EITHER their first major OR their second major in EITHER the first year or the senior year.
PARAMETERS FOR DATA SHARING:

1. IUCPR will provide a single copy of the NSSE Data File solely for non-commercial research by the Authorized Researchers.

2. The NSSE Data File will exclude the Unit ID code from Integrated Postsecondary Educational Data System (IPEDS), any other unique school or student identifiers, and any variables that IUCPR determines reasonably may permit the identification of a participating school or student.

3. The Authorized Researchers will not make any attempt, privately or publicly, to associate elements of the NSSE Data File with the individual institutions or individual students participating in the NSSE, nor will they share the data with anyone else who might do so.

4. In all publications or presentations of data obtained through this agreement, the Authorized Researchers agree to include the following citation: "NSSE data were used with permission from The Indiana University Center for Postsecondary Research."

5. The Authorized Researchers agree to provide to IUCPR a copy of all reports, presentations, analyses, or other materials in which the data given under this Agreement are presented, discussed, or analyzed.

6. The data should be encrypted when not in use by the above researcher and should be destroyed once this particular research project (dissertation) has been completed. If the researcher needs the data for any longer period than that which is necessary for completing the dissertation, the researcher is required to ask for an extension. Using the data for other purposes besides completing the designated project (dissertation) must be approved by the Director for the Center for Postsecondary Research at Indiana University at Bloomington.

7. The IUCPR of Indiana University may, by written notification to the Authorized Researchers and the Research Institution, terminate this Agreement if it determines, in its sole discretion, that either the Authorized Researchers or the Research Institution have breached the terms of this Agreement. In the event that this Agreement is terminated, the Authorized Researchers and Research Institution shall return the originals and all copies of the NSSE Data File to the IUCPR, and securely destroy all NSSE Data File elements contained in any analyses or other materials created or maintained by Authorized Researchers, within ten (10) days of the receipt of the termination notice.

8. IUCPR will not be liable to the Research Institution for any direct, consequential, or other damages, related to the use of the NSSE Data File or any other information delivered by Indiana University or IUCPR in accordance with this Agreement. The Research Institution shall defend, indemnify, and hold harmless The Trustees of Indiana University, their officers, employees, and agents, with respect to any and all claims.
causes of action, losses, and liabilities, of any kind whatsoever, arising directly or
directly from the Authorized Researchers' use of the NSSE Data File.

9. FEES

In exchange for access to and use of the NSSE Data File, Wendy Buenzli agrees to pay
Indiana University the sum of $550, by check upon execution of this Agreement.

SIGNATURES
The undersigned hereby consent to the terms of this Agreement and confirm that they have all
necessary authority to enter into this Agreement.

For The Trustees of Indiana University:

Amy O'Hair
Contract Officer
Office of Research Administration
Indiana University

Alexander C. McCormick
Director
National Survey of Student Engagement

For the Research Institution:

Samuel V. Brown
Name, Title, and Organizational Title of Authorized Institutional Official of Research Institution
Director of the Office of Research Integrity

Date
1/24/14
1/10/14
1/10/14
Acknowledgment of Authorized Researchers:

Wendy Byrd
Doctoral Student
University of Southern Mississippi

Dr. Sheila Davis
Dissertation Chair
University of Southern Mississippi

11-3-14
Date

11-11-14
Date
REFERENCES


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