introducing Quality Improvement Concepts into Nursing Curriculum: Perspectives of associate Degree Nurse Faculty

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ABSTRACT

INTEGRATING QUALITY IMPROVEMENT CONCEPTS INTO NURSING CURRICULUM: PERSPECTIVES OF ASSOCIATE DEGREE NURSE FACULTY

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Northern Illinois University, 2020
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Since the groundbreaking report *To Err is Human*, there has been an increased focus on outcomes and quality improvement (QI) in healthcare. This focus has resulted in a change in nursing education. Nursing programs and nurse educators have been directed to integrate QI into nursing curriculum using innovative teaching methods. However, the voices of Associate Degree Nurse (ADN) educators are absent from the literature. This qualitative research study used a phenomenological approach to ascertain ADN educators’ perspectives about integrating QI into their curriculum. The central questions of this research were: what are ADN faculty views on the integration of QI concepts into nursing curriculum; what do participants identify as barriers to integration of QI concepts into nursing curriculum; and what have participants come to believe about innovative teaching methods, curriculum design, and teaching QI? Fourteen ADN educators from community colleges in the Midwest were interviewed using semistructured interviews. Data were analyzed using first- and second-cycle coding. Also, college catalogs and nursing program handbooks were reviewed using content analysis. Findings and recommendations from this study will provide ADN faculty the tools needed to integrate QI into curriculum and allow students to be more prepared for transition to practice in the current healthcare environment.
INTEGRATING QUALITY IMPROVEMENT CONCEPTS INTO NURSING CURRICULUM:
PERSPECTIVES OF ASSOCIATE DEGREE NURSE FACULTY

BY
DEBBIE KRACTUS

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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
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DOCTOR OF EDUCATION

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Doctoral Co-Directors:
Gene Roth
Laura Johnson
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DEDICATION

To my children: Carlie, Mandy, and Marty. Do not give up and you will reach your goals.
TABLE OF CONTENTS

LIST OF TABLES ........................................................................................................... viii
LIST OF FIGURES ......................................................................................................... ix
LIST OF APPENDICES ................................................................................................. x

Chapter

1. INTRODUCTION ....................................................................................................... 1
   Statement of the Problem ............................................................................................... 2
   Purpose of the Study ....................................................................................................... 2
   Research Questions ....................................................................................................... 3
   Overview of the Study Design ....................................................................................... 3
   Background of the Study ............................................................................................... 3
   Positionality of the Researcher ..................................................................................... 11
   Study Significance ......................................................................................................... 16
   Definition of Terms ....................................................................................................... 16

2. REVIEW OF LITERATURE ....................................................................................... 21
   Conceptual Framework ................................................................................................. 21
   Nursing Policy ............................................................................................................... 24
   Quality Improvement Concepts .................................................................................... 28
   Nursing Practice ............................................................................................................ 32
   Influential Organizations .............................................................................................. 32
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Improvement Studies</td>
<td>35</td>
</tr>
<tr>
<td>Evidence-Based Practice</td>
<td>38</td>
</tr>
<tr>
<td>Curriculum Design</td>
<td>39</td>
</tr>
<tr>
<td>Content Overload</td>
<td>40</td>
</tr>
<tr>
<td>Concept-Based Curriculum</td>
<td>41</td>
</tr>
<tr>
<td>Nurse Education</td>
<td>43</td>
</tr>
<tr>
<td>Curriculum Change in Community Colleges</td>
<td>43</td>
</tr>
<tr>
<td>Curriculum Change in Nursing Education</td>
<td>44</td>
</tr>
<tr>
<td>Barriers to Implementation</td>
<td>50</td>
</tr>
<tr>
<td>Resources for Implementation of Quality Improvement into Curriculum</td>
<td>51</td>
</tr>
<tr>
<td>Theory Practice Gap</td>
<td>51</td>
</tr>
<tr>
<td>Summary of the Literature Review</td>
<td>53</td>
</tr>
<tr>
<td>3. METHODOLOGY</td>
<td>54</td>
</tr>
<tr>
<td>Research Design</td>
<td>54</td>
</tr>
<tr>
<td>Research Questions</td>
<td>55</td>
</tr>
<tr>
<td>Participants and Settings</td>
<td>55</td>
</tr>
<tr>
<td>Data Collection</td>
<td>59</td>
</tr>
<tr>
<td>Semistructured In-Depth Interviews</td>
<td>59</td>
</tr>
<tr>
<td>Face-to-Face versus Telephone Interviews</td>
<td>61</td>
</tr>
<tr>
<td>Documents</td>
<td>62</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>64</td>
</tr>
<tr>
<td>Coding</td>
<td>64</td>
</tr>
</tbody>
</table>
4. FINDINGS ................................................................. 73

ADN Faculty Believe Quality Improvement is an Important Topic, But There are Barriers to Integrating QI Into Curriculum ........................................ 74

Quality Improvement is a Complex Topic ........................................ 75

Few ADN Faculty Have Advanced Training or Experience in Quality Improvement ................................................................. 77

Confusion Between Evidence-Based Practice and Quality Improvement 78

ADN Faculty are Frustrated with Continual Curriculum Change .......... 83

Continual Curriculum Revision Due to Changes in Practice ............... 84

Curriculum Revision Due to Changes in Licensure Exam and Accreditation ..... 91

Resistance to Change .......................................................................... 94

Never Enough Time ........................................................................... 96

ADN Faculty Need Proactive Support and Resources to Keep Up with Change and to Implement Innovative Teaching Strategies ................................. 98

ADN Faculty Agree that Innovative Teaching Strategies are Needed .......... 98

ADN Faculty Need Proactive Support and Resources ............................. 109

5. DISCUSSION AND IMPLICATIONS ........................................ 119

QI is an Important Topic ...................................................................... 120

Faculty are Frustrated .......................................................................... 123

Nurse Faculty Need Proactive Support and Resources ........................... 126
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Research</td>
<td>129</td>
</tr>
<tr>
<td>Implications for Practice</td>
<td>132</td>
</tr>
<tr>
<td>Final Thoughts</td>
<td>136</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>138</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>151</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>1. NCLEX Pass Rates for AND vs. BSN Graduates</td>
<td>10</td>
</tr>
<tr>
<td>2. Research Participants</td>
<td>57</td>
</tr>
<tr>
<td>3. Community College Statistical Data</td>
<td>58</td>
</tr>
<tr>
<td>4. Course Evaluations for QI in SLO and Nursing Courses for 2016-2017</td>
<td>67</td>
</tr>
<tr>
<td>Figure</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
</tr>
<tr>
<td>1. Conceptual Framework</td>
<td>23</td>
</tr>
</tbody>
</table>

LIST OF FIGURES
LIST OF APPENDICES

<table>
<thead>
<tr>
<th>APPENDIX</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. TIMELINE FOR QUALITY IMPROVEMENT DEVELOPMENT IN HEALTHCARE</td>
<td>151</td>
</tr>
<tr>
<td>B. WRITTEN INFORMED CONSENT</td>
<td>154</td>
</tr>
<tr>
<td>C. INTERVIEW GUIDE</td>
<td>157</td>
</tr>
<tr>
<td>D. SUMMARY OF THEMES AND SUBTHEMES</td>
<td>161</td>
</tr>
</tbody>
</table>
CHAPTER ONE
INTRODUCTION

Healthcare is a complex system and concerns about cost and quality have increased the complexity. Regarding this complex U.S. system, “despite outspending all other comparable high-income nations, our system ranks last or near last on measures of health, quality, access, and cost” (Salmond & Echevarria, 2017, p.15). Further, underdeveloped quality improvement infrastructures, lack of accountability for making quality happen, inconsistent use of evidence-based practice, and lack of digital data use to improve care all contribute to quality care issues (Shih et al., 2008). To force healthcare changes that improve quality and safety, the focus on quality outcomes has increased. For example, by 2018 50 cents of every Medicare dollar is expected to be linked to an identified quality outcome or value (Burwell, 2015). According to Salmond and Echevarria (2017), “quality will be defined in terms of measurable outcomes and patient experience at the individual and population levels, and payments (penalties and incentives) will be calculated on the basis of the outcomes” (p.16).

Within this complex healthcare environment nurses must function to advance care for patients. A greater focus on quality, safety, and outcomes have resulted in the need to educate nurses about how to enhance care within these areas. One way to improve outcomes is using systematic approaches, such as quality improvement (QI) processes. Although systematic approaches to QI are utilized in healthcare organizations, nursing education has been slow to integrate QI concepts into curriculum. Consequently, most nursing students continue to focus on
care of the individual patient and not upon improving outcomes within the healthcare system in which they will be working. Nurse educators have been given a directive to integrate QI concepts into the nursing curriculum, but such integration has been slow to occur and nursing graduates are not prepared for QI, especially at the Associate Degree Nursing (ADN) level (Djucik et al., 2019) This chasm has resulted in a gap between what students learn in nursing school and what students are expected to know when they begin to practice. This gap in nursing education and nursing practice is known as a theory-practice gap (Thornlow & McGuinn, 2010)

Statement of the Problem

ADN faculty need to prepare graduates to function within a system that focuses on outcomes and promotes the use of QI to improve these outcomes. Nurse educators are being directed or encouraged to introduce QI concepts into their curriculum. However, little research has been conducted on the faculty who are engaged in this curriculum integration. Missing from the research are the voices of nurse educators regarding this aspect of curriculum change. Findings of this research are needed to inform stakeholders involved in nursing education about faculty attitudes towards integrating QI concepts into nursing curriculum and to determine future research that targets nursing curriculum and instruction.

Purpose of the Study

The purpose of this research study was to explore ADN faculty’s perspectives regarding the integration of QI concepts into nursing curriculum. In addition, nurse faculty were asked about innovative ways to teach QI concepts and their opinion of the curriculum resources available to teach QI concepts.
Research Questions

The central questions of this research are:

1. What are ADN faculty views on the integration of QI concepts into nursing curriculum?
2. What do participants identify as barriers to integration of QI concepts into nursing curriculum?
3. What have participants come to believe about innovative teaching methods, curriculum design, and teaching QI?

Overview of the Study Design

This qualitative study utilized semistructured in-depth interviews as the method of data collection. The participants were obtained using purposive sampling and included full-time ADN faculty from community colleges in a Midwestern state. The fourteen participants taught both the clinical and classroom portions of nursing courses and were located within a two-hour drive of the researcher. NVivo11 was used to assist with data management, analysis, and open coding.

Background of the Study

In 2000, the IOM published the groundbreaking report To Err Is Human: Building a Safer Health System (Kohn et al., 2000). This report, based upon the analysis of two major studies, concluded that as many as 44,000 to 98,000 people die in American hospitals each year from preventable medical errors. Further, the total national costs associated with adverse events (medical errors resulting in injury) were estimated to be between 17 billion and 29 billion dollars (Kohn et al., 2000). The report To Err Is Human is essential to healthcare because it not only
increased awareness of medical errors and the associated costs, but also spurred initiatives to address safety and quality in healthcare.

In March 2001, the IOM released a follow-up report, *Crossing the Quality Chasm: A New Health System for the 21st Century* (Wolfe, 2001). This report claimed that the United States healthcare delivery system does not provide high-quality medical care to all people because the system is poorly organized and has not kept pace with the growing complexity of healthcare. In this report, the Committee on Quality of Healthcare in America called for a redesign of the entire health system. The committee proposed strategies for reinventing the system and listed six aims for improvement. These aims were based on the primary need for healthcare to be safe, effective, patient-centered, timely, efficient, and equitable. This report also proposed ten simple rules that should be used to inform efforts to redesign the healthcare system. These rules are that the healthcare system provides continuous healing relationships at all times of the day, customizes care based on patient needs and values, recognizes the patient as the source of control, expects shared knowledge and the free flow of information, requires evidence-based decision making, keeps patients safe from injury caused by the healthcare system, provides transparency with patients and their information, anticipates the need of patients, decreases waste, and supports collaboration among clinicians. Finally, the report stated that clinical education for the health professions must be restructured to achieve these aims (Wolfe, 2001).

Consequently, in June of 2002, the IOM convened a group of interdisciplinary leaders and experts to develop the next steps for reform of health professions education. In that report, *Health Professions Education: A Bridge to Quality*, a set of five core competencies related to the education of all healthcare professionals was proposed. Competency number four, applying QI
relates specifically to the topic of this research, namely, integrating QI concepts and the application of QI processes into the nursing curriculum (Greiner & Knebel, 2003).

As stated earlier, healthcare has become an increasingly complex system. There are multiple providers of care, new and ever-changing technologies, increasing competition, an aging population with an associated increase in chronic health issues, diverse patient populations, regulatory constraints, a growing ubiquity of information, and an increased attention to quality outcomes (American Organization of Nurse Executives [AONE], 2010; Clancy, Effken, & Pesut, 2008). Because of this increased complexity, many healthcare organizations and leaders have called for an organized approach to implementing quality improvements in healthcare. In 2008, the Joint Commission, a well-known accrediting agency for healthcare organizations, created the Joint Commission Center for Transforming Healthcare to help solve healthcare’s most critical quality problems using systematic QI processes such as Lean, Six Sigma, a Lean Six Sigma blend, and other change management processes/methodologies (De Koning et al., 2006; Joint Commission Center for Transforming Healthcare, 2014). Like the Joint Commission, the AONE (2010) has also called for a systematic approach to solving problems in healthcare. In fact, assumption one of the guiding principles for future patient care delivery states that the future of healthcare delivery will require a systems approach with all disciplines involved in the process and outcomes model. The second principle of this assumption is that nursing leaders should educate staff about performance improvement processes that address quality, safety, and outcomes (AONE, 2010).

The American Nurses’ Credentialing Center (ANCC), an affiliate of the American Nurses Association, has created the Magnet Recognition Program to acknowledge excellence in nursing practice. To obtain Magnet certification, hospitals must satisfy a set of criteria designed to
measure the strength and quality of their nursing workforce. Healthcare organizations seek Magnet recognition because Magnet facilities provide high-quality nursing care with improved patient outcomes (ANCC, 2016; Drenkard, Wolf, & Morgan, 2011). These outcomes are improved because nurses within Magnet facilities are expected to utilize QI concepts to solve problems and improve processes (Drenkard et al., 2011).

Nursing’s foundational principles and guidelines identify that as a profession, nursing has a responsibility to measure, evaluate, and improve practice. In fact, the founder of modern nursing, Florence Nightingale, used statistics to prove (through measurement and evaluation) that the poor sanitary conditions she noticed in the treatment of soldiers in the Crimean war led to increased deaths. And, she improved practice by implementing handwashing, among other hygiene practices, in the hospitals in which she worked. The American Nurses Association (ANA) has also recognized that the nursing profession has a responsibility to seek continual improvement in nursing practice. The ANA has published two books that specifically mention QI as the role and responsibility of the registered nurse: The Code of Ethics for Nurses with Interpretative Statements Nursing and the Scope and Standards of Practice.

At three million members, nurses represent the largest segment of the nation’s health care workforce. Further, as direct care providers, nurses impact many patient outcomes (IOM, 2011). Consequently, nurses are in a unique position to serve as change agents within health systems (Hall et al., 2008). Staff nurses are expected to be involved with collecting QI data on a regular basis. However, many practicing nurses do not graduate with the knowledge, skills, or attitudes necessary to move beyond the task of reading results. Kovner et al. (2010) found that nearly 39% of new graduates thought that they were poorly or very poorly prepared to implement QI measures and were not at all prepared to use QI techniques. Potentiating the problem is the fact
that many nurse faculty, whose average age is greater than 55 years, are educationally and experientially unprepared to teach students QI processes (Cronenwett et al., 2007) because, when they completed their schooling outcome management and QI content were not explained (Flores et al., 2013).

Practicing nurses should be able to understand and apply QI concepts, but equally important is the task of training future nurses about QI concepts and the application of QI processes. According to Flores et al. (2013), hospitals should have a pool of graduate nurses ready to participate in QI upon hire. However, significant changes in nursing curriculum are required if students are to graduate with beginning levels of competence in QI (Thornlow & McGuinn, 2010). Three nursing organizations are known for their contributions to nursing education: the National League for Nursing (NLN), the American Association of Colleges of Nursing (AACN), and Quality and Safety Education for Nurses (QSEN). All these organizations have recognized the importance of preparing future nurses to work within an increasingly complex healthcare system and they have called for the integration of QI concepts into the nursing curriculum. Further, they have developed competencies for nursing education that address the IOM recommendations (AACN, 2008; NLN 2010, QSEN, n.d.).

In addition to the IOM, NLN, AACN, and QSEN recommendations to integrate QI concepts into nursing curriculum, added pressure exists to do so using innovative and creative pedagogies. The IOM has asserted that the ways nurses were educated in the 20th century are no longer adequate for dealing with the realities of the more complex care environments found in the 21st century (IOM, 2010). Nurse educators continue to teach how they were taught but this approach is no longer acceptable in complex and rapidly changing healthcare environments (Phillips et al., 2013).
Many nursing organizations and researchers have recognized that nursing graduates are poorly prepared to implement QI measures. Thus, nursing curriculum reform is necessary (IOM, 2010, 2011; Kovner et al., 2010; NLN 2003, 2005; Phillips, 2013). Most of the suggested reform is focused on four areas: incorporating safety and quality competencies into nursing education, redesigning conceptual frameworks, reducing content-laden curriculum, and teaching using alternative pedagogies (Forbes & Hickey, 2009). Unfortunately, nurse educators may not have the necessary education and experience to implement the required changes (Cronenwett et al., 2007; Sherwood & Drenkard, 2007).

Djucik et al. (2019) completed a study to address quality and safety education gaps between ADN and BSN graduates in two cohorts of new nurses who graduated between 2007–2008 and 2014–2015. Analyzing differences in the cohorts, they found that in the 2007 – 2008 cohort BSN graduates reported being better prepared than ADN graduates in five areas: evidence-based practice (EBP), analyzing data, using tools to analyze data and monitor projects, measuring resulting changes from implemented improvements, and repeating four QI steps until the desired outcome is achieved. In the 2014–2015 cohort, BSN graduates reported being better prepared than ADN graduates in the same five topics noted in the 2007–2008 cohort but also in seven other topics: data collection, flowcharting, project implementation, measuring current performance, assessing gaps in current practice, applying tools and methods to improve performance, and monitoring sustainability of changes. Thus, educational disparities exist between ADN graduates and BSN graduates in terms of quality and safety preparedness (Djucik et al., 2019).

A disconcerting note is that the number of educational gaps more than doubled in 2014–2015 compared to 2007–2008 graduates. This finding is concerning because 50% of nurses are
educated at the ADN level. Consequently, greater effort and investment are needed on the part of ADN programs to boost students’ educational preparedness in quality and safety with curriculum focus on EBP and QI.

According to Djucik et al. (2019), it is unclear why current nursing school accreditation requirements, licensing exams issued by the National Council State Boards of Nursing, QSEN, and other educational efforts have left ADN graduates behind in terms of quality and safety educational preparedness in comparison to BSN graduates. Thus, Djucik et al. asserted that ADN educators needed to engage with QSEN content so they can educate ADN students in EBP and QI. This engagement is especially critical in this time of important health system reforms that depend on RNs to lead change and advance health.

Another concern is that ADN students who return to school for their BSN (RN-BSN) may not have the level of QI content needed to make them competent in QI principles (Trent et al., 2017). Trent et al. did not compare the level of preparedness of RN-BSN graduates to traditional BSN graduates; however, they found that RN-to-BSN students believed they were prepared for QI projects upon graduation, but the scores indicated the RN-BSN graduates lacked QI knowledge and skills. This finding suggests that ADN programs not only need to integrate QI content into their curriculum but also that they should teach students how to apply these principles through active learning strategies.

A growing gap has occurred in the NLCEX pass rates between ADN and BSN graduates (Brussow et al., 2019). Since 2006 BSN graduates have had a higher percent pass rate than ADN graduates; whereas from 1998 to 1994 ADN graduates consistently had a higher pass rate than BSN graduates (Table 1). Thus, ADN graduates lagged behind BSN graduates in NCLEX pass rates during that 14-year period.
<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2019</td>
<td>85.17</td>
<td>91.22</td>
</tr>
<tr>
<td>2018</td>
<td>85.11</td>
<td>91.57</td>
</tr>
<tr>
<td>2017</td>
<td>84.24</td>
<td>90.04</td>
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<tr>
<td>2016</td>
<td>81.68</td>
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</tr>
<tr>
<td>2015</td>
<td>82.00</td>
<td>87.49</td>
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<tr>
<td>2014</td>
<td>79.26</td>
<td>84.93</td>
</tr>
<tr>
<td>2013</td>
<td>81.43</td>
<td>85.18</td>
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<td>2010</td>
<td>84.46</td>
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<td>86.2</td>
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Source: NCSBN, n.d.
One explanation for this change in pass rates is the increasing volume of information to be covered in nursing education programs (Brussow et al., 2019). According to Giddens and Brady (2007), a shift from the industrial age to the information age, changes in health care delivery, teacher-centered pedagogy, content repetition, and the academic-practice gap have resulted in content overload. Although BSN programs have 120 semester credit hours to prepare students for the NCLEX, ADN programs are supposed to prepare students in 60 - 70 semester credit hours (McBride, 2019). Some nurse educators have questioned if it is possible to fit all the content needed to train nurses into the BSN curriculum (Ironside, 2004) let alone the ADN curriculum.

However, another explanation may be that BSN programs have a greater focus on research, EBP, and QI than ADN programs. In fact, BSN programs have guidelines that require QI be taught and applied, whereas ADN programs do not have such guidelines. Yet, the NCLEX includes QI and the application of QI processes. Thus, some of this lag could be attributed to the lack of QI content in ADN programs and the lack of QI application in ADN curriculum.

Positionality of the Reseacher

I have been a nurse for 29 years. When I first began working as a nurse I was taught to focus on the patients within my care. A focus on the outcomes of the care I provided or the cost of providing that care was not forefront in my nursing role. If a patient developed a pressure ulcer it was explained as something that occurs with bedbound patients. If a patient contracted a hospital acquired infection, we treated the infection; and insurance, or Medicare paid for that treatment. Resources and funding seemed to be endless; the hospitals billed for services and insurers paid regardless of the outcomes.
Throughout the 1990s I worked as a nurse in various patient care areas: Intensive Care Unit, Post Anesthesia Care Unit, Acute Care, physician’s office, Gastrointestinal Unit, Day surgery, and Minor Surgery. During this time, I do not recall being concerned about how patient outcomes impacted healthcare agency reimbursement or my role in improving these outcomes; I was more focused on my patients and their needs. I was, however, concerned about patient satisfaction because patients completed surveys that evaluated the care they received. Thus, nurses were held accountable for the care they provided. Yet, patient care outcomes were not openly reported and thus, staff nurses were not very concerned with the impact the outcomes had on the organization for which they worked.

I had learned about diagnostic readiness groups (DRGs) in school, but I did not see the relationship between the individual patient care I provided and reimbursement. DRGs were introduced by Medicare in 1983 as a new prospective payment model in which hospitals received a set amount of money based on the patient’s diagnosis. Prior to this new model, hospital reimbursement operated on a cost-based system in which hospitals retrospectively billed for the actual costs of an episode of care. With the implementation of DRGs, hospitals began to experience the consequences of poor outcomes. For example, if a patient recovered successfully after surgery and went home sooner than expected, the hospital made money. However, if a patient had complications that required more resources or a longer stay than anticipated, the hospital lost money. This reimbursement shift resulted in a need to improve outcomes in order to decrease costs. Although the hospitals where I worked were being reimbursed based on DRGs, I was not aware of how this process impacted the institution, and I did not believe I was responsible for improving the overall hospital outcomes. My focus was still on providing the best care possible for my patients, not looking to improve processes that could improve outcomes for
many patients. However, my attitude towards my role within the healthcare system changed in
2005 as I began my new position as a nurse educator.

With the release of, *To Err Is Human*, the focus on quality and safety outcomes
intensified within healthcare. Not only were thousands of people dying because of healthcare
errors, but these errors were also costing Medicare, private insurers, and individuals an estimated
17 to 29 billion dollars per year (Kohn et al., 2000). In an effort to improve outcomes and
decrease healthcare costs, Medicare ceased payment for patients who acquired certain
preventable conditions during their inpatient hospital stay beginning October 1, 2008 (Peasah et
al., 2013). Consequently, hospitals were then held financially accountable for negative patient
outcomes. Changes needed to improve patient outcomes were discussed, and many processes
were implemented to help prevent hospital-acquired conditions. I remember three specific
hospital-acquired conditions, now known as “never events” being of specific concern: catheter-
associated urinary tract infections (CAUTIs), vascular catheter-associated infections (VCAI),
and stage three and four pressure ulcers. I was shocked that Medicare was not going to pay for
these conditions, and I was terrified of how this would impact hospitals. I remember thinking,
“How will hospitals be able to stay in business? They will need to find ways to decrease negative
outcomes.” I recall a great deal of turmoil within healthcare systems. I also recall thinking, “This
change may actually improve care for patients on a large scale.”

My interest in QI piqued after working as a nurse educator because my advanced
education and exposure to the whole picture of healthcare helped me broaden my view of the
nurse’s role within this intricate system. I began to understand more about the business of
healthcare and the issues impacting healthcare agencies. I realized the financial impact the
Medicare non-reimbursement for hospital-associated complications could have on healthcare
systems and I also accepted my responsibility to ensure the safety of all patients, not just those in my immediate care. After several years of teaching, I began to appreciate the role that all nurses play within the system and I recognized that QI, which was once a responsibily of nurse managers or higher administration, now filtered down to staff nurses. As an educator I accepted my responsibility to prepare my students for this new outcome-based healthcare system and wanted to help them understand the positive changes they could make.

Another factor that increased my focus on teaching students QI was the expanding number of hospitals obtaining Magnet certification. Nurses within Magnet facilities are expected to utilize evidence-based practice and QI concepts to improve processes and ultimately outcomes. However, the most pivotal point in my journey to understanding how QI was being taught by nurse educators occurred in the spring of 2015 when I attended a QSEN conference. During this conference, I learned more about the QSEN competencies including quality improvement and I became more familiar with the concept of systems thinking. I began to question what concepts, activities, and learning objectives were embedded within the curriculum where I teach that addressed QI, and this motivated me to learn more about what is being done within nursing education to teach students about QI. After attending this conference, I believed I had a method by which to help students see the bigger picture of healthcare systems and a way to help them understand how their individual action or inaction impacts the whole system.

As I began researching this topic further, I was less confident in my ability to teach students about QI since I never received formal training in QI tools and QI processes, and I have limited experiences of applying QI processes to improve outcomes. Of course, I could lecture on QI concepts that are covered in our textbooks, but lecturing does not prepare the students to utilize QI processes in their clinical practice. I recall the first time I taught QI content, I skipped
over the QI tools (i.e., Pareto charts, fishbone diagram, and flow charts) and told the students, “You don’t need to know about these tools.” Looking back, I realize I was mistaken.

I believed the best way to teach students to apply QI is through innovative teaching strategies such as active learning strategies involving simulation, case studies, or QI projects. However, I also realized that I lacked the expertise to implement and evaluate many of these innovative pedagogies. I had received some training in innovative teaching, and I partially implemented a flipped classroom for one course I taught. Nonetheless, I certainly was not comfortable with innovative pedagogies such as the Concept Based Curriculum and alternative teaching strategies. Nor did I have the time to revise my curriculum using the innovative strategies the NLN and others were recommending. I believed that ADN students should receive education about the meaning and intent of QI; and how to use data, tools and processes to make improvements in healthcare and ultimately outcomes. I thought that the best way to teach QI to students was through active learning strategies that require students to complete QI projects.

When I neared the end of my Ed.D. coursework I began to wonder what other ADN faculty believed about the suggestions for curriculum reform that came from healthcare and nursing education organizations. What tensions are they experiencing? Do they have similar frustrations as me? What do they see as the barriers to implementing the suggested changes? And, do they know of resources that are available to help with these changes? I was also curious about how ADN faculty were teaching QI to their students. Did they include QI in their student learning outcomes? If so, in which courses were they teaching QI and how did they decide what QI concepts to teach? Finally, I was interested in understanding the formal processes in nursing education that impacted how ADN faculty taught QI.
Study Significance

Since the groundbreaking report *To Err Is Human* was released, the focus on improving healthcare outcomes has increased (Dolansky & Moore, 2013). This focus on improved outcomes has resulted in recommendations by stakeholders to apply QI processes in healthcare organizations and to teach future registered nurses about QI. Some progress has been made in teaching nursing students about QI. However, new graduate nurses are poorly prepared to implement QI in practice, especially the ADN graduate (Djucik et al., 2019; Flores et al., 2013).

This research study gave voice to nurse educators regarding this aspect of curriculum change. It ascertained ADN faculty perspectives regarding the recommendations by stakeholders that nursing curriculum include the application of QI concepts using innovative pedagogies. Findings of this research can inform stakeholders involved in nursing education about faculty perspectives regarding the integration of QI concepts into the nursing curriculum. Additional insights may also be gleaned regarding the use of innovative pedagogies to teach QI. Finally, suggestions for future research are offered that target nursing curriculum and instruction.

Definition of Terms

American Association of Colleges of Nursing (AACN): an organization that works to establish quality standards for nursing education; assist schools in implementing those standards; influence the nursing profession to improve health care; and promote public support for professional nursing education, research, and practice.
American Nurses Association (ANA). The purpose of the ANA is to improve patient care through supporting both individuals and organizations to advance the nursing profession. They do this by advocating for policy and laws and by setting the bar for credentialing worldwide.

American Organization of Nurse Executives. The AONE leads, represents and serves hospitals, health systems and other related organizations that are accountable to the community and committed to health improvement. The AONE promotes innovative and expert nursing leadership.

Accreditation Commission for Education in Nursing. The ACEN supports the interests of nursing education, nursing practice, and the public by the functions of accreditation. ACEN is one of the accrediting bodies for associate degree nursing programs.

Associate Degree nurse (ADN): a registered nurse with a two-year associate degree

Bachelor of Science nurse (BSN): a registered nurse with a four-year bachelor’s degree.

Center for Medicare and Medicaid Services (CMS): a federal agency within the United States Department of Health and Human Services (HHS) that administers the Medicare program and works in partnership with state governments to administer Medicaid, the Children's Health Insurance Program (CHIP), and health insurance portability standards.

Diagnostic related groups (DRGs): a prospective payment model in which hospitals received a set amount of money based on the patient’s diagnosis.

Evidence-based practice (EBP): using the best available research to make patient-care decisions and change clinical practice.

Institute for Healthcare Improvement (IHI): founded in 1991 as part of the National Demonstration Project on Quality Improvement in Health Care. The IHI’s mission is to improve
health and healthcare worldwide and the IHI has released many innovations and initiatives to support this work.

Institute of Medicine (IOM). The Institute provides objective, timely, authoritative information and advice concerning health and science policy to government, the corporate sector, the professions and the public.

Joint Commission: responsible for evaluating and accrediting health care organizations and inspiring them to excel in providing safe and effective care of the highest quality and value.

Lean: a set of management practices based on the Toyota Production System (TPS). There are two parts: eliminate waste and non-value-added activity (NVA) through continuous improvement and practice respect for people.

Magnet certification: is a symbol for excellence in nursing. Magnet status is an award given by the American Nurses’ Credentialing Center (ANCC), an affiliate of the American Nurses Association, to hospitals that satisfy a set of criteria designed to measure the strength and quality of their nursing.

National Council Licensure Examination (NCLEX): a nationwide examination for the licensing of nurses in the United States and Canada since 1982 and 2015, respectively. There are two types, the NCLEX-RN and the NCLEX-PN.

National Council of State Boards of Nursing (NCSBN). The NCSBN is responsible for developing the NLCEX, a psychometrically sound and legally defensible nurse licensure exam consistent with current practice.

National Database of Nursing Quality Indicators (NDNQI): the only national nursing quality measurement program that enables hospitals to compare measures of their nursing quality against national, regional and state norms for hospitals of the same type down to the unit level.
National League for Nursing (NLN): an organization for nurse educators that offers professional development, teaching resources, research grants, testing services, and public policy initiatives.

Never events: serious and costly errors in the provision of health care services that should never happen. Certain never events will result in reduced or no payment by Medicare.

Quality and Safety Education for Nurses (QSEN): a project funded by the Robert Wood Johnson Foundation which began in 2005 to address the challenge of preparing future nurses with the knowledge, skills, and attitudes necessary to continuously improve the quality and safety of the healthcare systems in which they work.

Quality Improvement: a systematic, formal approach to the analysis of practice performance and efforts to improve performance.

Registered nurse: a nurse who has graduated from a college's nursing program or from a school of nursing and has passed a national licensing exam.

Robust process improvement (RPI): a newer systematic approach in healthcare “to dissecting complex safety problems and guiding organizations to deploy highly effective solutions” (Chassin & Loeb, 2011, p. 564). Examples of RPI include Lean, Six Sigma, and change management.

Six Sigma: a management philosophy developed by Motorola that emphasizes setting extremely high objectives, collecting data, and analyzing results to a fine degree as a way to reduce defects in products and services. This increase in performance and decrease in process variation lead to defect reduction and improvement in profits, employee morale, and quality of products or services. There are two Six Sigma processes. Six Sigma DMAIC is a process that defines, measures, analyzes, improves, and controls existing processes that fall below the Six
Sigma specification. Six Sigma DMADV defines, measures, analyzes, designs, and verifies new processes or products that are trying to achieve Six Sigma quality.

Systems thinking: an approach that can be applied to all systems to determine what problems exist, what components are included in the problem, and what can be changed to solve the problem.

Total quality management (TQM): one of the first quality-oriented philosophies to transition into healthcare (1990s). TQM is based on three principles: continuous quality improvement (CQI), customer focus, and teamwork.
CHAPTER TWO

REVIEW OF LITERATURE

In chapter two the complexity of the healthcare system and the multiple forces influencing nursing education and curriculum are discussed. General systems theory (GST) states that although the individual parts of a system can be identified and studied, their functioning is still dependent upon the larger system (Boulding, 1956). Nursing education is dependent upon the larger healthcare system, and often changes in healthcare practice and policy require changes in nursing curriculum. This chapter also presents the three major influences on nursing curriculum; nursing policy, nursing practice, and nursing education. Quality improvement is selected as a topic for integration into nursing curriculum.

Conceptual Framework

Improving care at the individual level and bettering outcomes at the institutional level require looking at the population data from which the individual is drawn (Salmond & Echevarria, 2017). If you only look at the health of one individual, you can miss vital trends across a group of patients and within a population or community. Thus, the first aim called for in the report, Crossing the Quality Chasm, is safety. Within this aim, the IOM stated that reducing risk and ensuring patient safety in healthcare requires a “systems” focus (Wolfe, 2001).

Therefore, the theory that will guide this study is GST. Although the notion of GST was articulated in the 1930s by Ludwig Von Bertalanffy (1972), the notion of systems is as old as European philosophy. Aristotle (322-384 BC) presented a holistic world view that proposed that
“the whole is more than the sum of its parts” (as cited in Von Bertalanffy, 1972, p. 407). General Systems Theory was created in response to the Scientific Revolution of the sixteenth and seventeenth centuries when science attempted to reduce systems to their smallest component to be studied and causal relationships determined. Yet, while the individual parts of a system can be identified and studied, their functioning is still dependent upon the larger system. GST addresses this belief and has helped describe general relationships of the empirical world (Boulding, 1956). The focus GST is analyzing the relationships among the parts of the system and assessing the effects of those relationships (Swanson & Holton, 2001).

GST fits well within the proposed research because healthcare organizations are large complex systems within which nurses must practice. In addition, nurses are being challenged to find ways to improve quality, and nursing students need to learn how to work within this complex system to effect change using QI. However, some criticisms of GST exist that must be addressed. First, GST is often dismissed as irrelevant because it is seen as theoretical and impractical, and too abstract for everyday use (Boulding, 1956; Torraco, 2014). However, systems thinking has emerged as an outgrowth of GST, and this emergence has contributed to the concepts of GST being successfully implemented in many disciplines (Trbovich, 2014). A second criticism is that at the higher levels of systems that were identified by Boulding, including social organizations (i.e., healthcare systems), GST is unable to develop credible models and languages of description. Therefore, whereas GST feels intuitively correct, proving the existence of various systems described by Boulding is not possible (Wilby, 2006).

The topic under study in this research, integrating QI concepts into ADN curriculum, involves several interrelated components, including nursing policy, nursing practice, nursing education, and QI concepts. Further, within each of these areas are many external professional
bodies that influence the system. Therefore, to address one area without understanding how it relates to a larger picture will not give a full explanation of the problem. Consequently, a conceptual framework that identifies the areas needing to be reviewed to address this topic was created (Figure 1).

Figure 1. Conceptual Framework.

This figure depicts three major influences that play roles in nursing curriculum change: nursing policy, nursing practice, and nursing education. Each of these influences has external professional bodies that guide their functions. For example, in nursing policy, the IOM, The Joint Commission, and AONE are calling for quality improvement in healthcare. In nursing practice, many healthcare organizations have implemented QI practices to improve quality. In nursing education, QSEN, NLN, and AACN recommend that educators use innovative teaching methods to train future nurses about quality improvement. However, curriculum change to
include QI concepts has lagged (Flores et al., 2013). Consequently, new graduate nurses lack preparation regarding quality improvement. Employers are expecting new graduate nurses to understand and utilize QI but nursing curriculum has not prepared them to meet this expectation for practice. This disconnect is known as a theory-practice gap (TPG). It is with this conceptual framework in mind that the literature will be reviewed.

Nursing Policy

Several external professional bodies, including IOM, the Joint Commission, and AONE, have called for improved outcomes in healthcare. The resulting suggestions from these organizations have had a major impact on nursing policy and nursing education. In two reports, the IOM (Wolfe, 2001; Greiner & Knebel, 2003) specifically mentioned QI as an area that needs to be addressed within healthcare organizations. In 2000, the IOM published the groundbreaking report *To Err Is Human: Building a Safer Health System*. This report increased awareness of medical errors and the associated costs and spurred initiatives to address safety and quality in healthcare. A follow-up report, *Crossing the Quality Chasm: A New Health System for the 21st Century* was released in March 2001. This report claimed that the United States healthcare delivery system does not provide high-quality medical care to all people because the system is poorly organized and has not kept pace with the growing complexity of healthcare. In this report, the Committee on Quality of Healthcare in America called for a redesign of the entire health system (Wolfe, 2001). The committee proposed strategies for reinventing the system and listed six aims for improvement. These aims are based on the primary need for healthcare to be: (a) safe by avoiding injuries to patients from care that is anticipated to help them; (b) effective by providing services based on scientific knowledge to all who could benefit and by not providing
services to those unlikely to benefit; (c) patient-centered by providing care that is respectful of and responsive to individual preferences, needs, and values and ensuring the patient values guide all clinical decisions; (d) timely by reducing waits and sometimes harmful delays; (e) efficient by avoiding waste of equipment, supplies, ideas, and energy; and (f) equitable by providing care that does not differ in quality because of personal characteristics (Wolfe, 2001).

This report also proposed ten simple rules that should be used to inform efforts to redesign the healthcare system: 1) care is based on continuous healing relationships, 2) care is customized, 3) the patient is the source of control, 4) knowledge is shared, and information flows freely, 5) decision making is evidence-based, 6) safety is a system priority, 7) transparency is necessary, 8) needs are anticipated, 9) waste is continuously decreased, and 10) cooperation among clinicians is a priority. Finally, the report stated that clinical education for the health professions must be restructured to achieve these aims (Wolfe, 2001).

In 2002 a group of interdisciplinary leaders and experts was convened by the IOM to develop the next steps for reform of health professions education. They released a report, *Health Professions Education: A Bridge to Quality*, proposing a set of five core competencies related to the education of all healthcare professionals. These competencies included: (1) provide care that is respectful of, and responsive to, individual patient preferences, needs, and values; (2) work with healthcare providers from different fields to provide the best care or best outcome for a patient or group of patients; (3) employ conscientious use of current best evidence in making decisions about patient care; 4) use data to continuously improve the quality and safety of health care systems and 5) utilize information technology to organize and analyze health records to improve healthcare outcomes (Greiner & Knebel, 2003). This report highlighted that these competencies were based on the ten rules for redesign that were discussed in the *Crossing the*
Quality Chasm report (Wolfe, 2001). Competency number four (QI) from the 2002 IOM report relates specifically to the topic of this research, namely, integrating QI concepts and the application of QI into nursing (Greiner & Knebel, 2003).

In 2008, the Joint Commission, a well-known accrediting agency for healthcare organizations, created the Joint Commission Center for Transforming Healthcare. One purpose of the Center for Transforming Healthcare is to solve healthcare’s most critical quality problems using robust process improvement (RPI) (Joint Commission Center for Transforming Healthcare, 2014). RPI is a newer systematic approach in healthcare “to dissecting complex safety problems and guiding organizations to deploy highly effective solutions” (Chassin & Loeb, 2011, p. 564). The most popular QI processes being used in the healthcare setting to address RPI are Lean, Six Sigma, a Lean Six Sigma blend, and Plan Do Study Act (PDSA) (De Koning et al., 2006; Joint Commission Center for Transforming Healthcare, 2014).

Like the Joint Commission, the AONE (2010) has also called for a systematic approach to solving problems in healthcare. For example, assumption one of the guiding principles for future patient care delivery states that the future of healthcare delivery will require a systems approach with all disciplines involved in the process and outcomes model. The second principle of this assumption is that nursing leaders should educate staff about performance improvement processes that address quality, safety, and outcomes. Within this second principle is the recommendation, based off the 2001 IOM report, that nurse leaders should reorganize and reallocate resources to increase quality, decrease costs, and improve efficiency (AONE, 2010).

Prompted by the IOM 2001 report on medical errors, the National Quality Forum (NQF) developed a list of serious reportable events (commonly referred to as “Never Events”). These events were divided into several areas: surgical events, product or device events, patient
protections events, care management events, environmental events, and criminal events. Within each of these areas, were specific examples of events that should never occur. The Center for Medicare and Medicaid Services (CMS) used this list to identify hospital-acquired conditions that lead to higher medical costs because of the extra cost of treating these preventable conditions. In 2008, the CMS stopped reimbursing healthcare organizations for these hospital-acquired conditions, which include: falls and trauma; surgical site infection after bariatric surgery for obesity, certain orthopedic procedures, and bypass surgery (mediastinitis); vascular-catheter associated infection; catheter-associated urinary tract infection; foreign object left in patient after surgery; air embolism; administration of incompatible blood; and stage three or four pressure ulcers after admission. Since 2008 the CMS has added four more hospital-acquired conditions for which they will not reimburse.

Although the goal of the NQI was to decrease the funds that CMS had to pay, the policy was also intended to encourage hospitals to provide better quality of care by minimizing the rates of adverse events (Stone et al., 2010). Because the nursing profession is responsible for most, if not all hospital-acquired conditions, nurses are on the forefront for determining ways to improve patient outcome by decreasing or eliminating the occurrence of these hospital-acquired conditions.

During the last decade national initiatives have been implemented to improve quality and safety in health care. These initiatives have been based upon the IOM reports and recommendations. Yet national healthcare quality organizations, such as the Leapfrog Group, are reporting that hospitals’ performance on safety outcomes has not significantly improved. And, according to Leah Binder, Chief Executive Officer of the Leapfrog group, “1,000 people die every day from preventable accidents in hospitals” (Hospital safety score, 2015, para 2). In
addition, research on the prevalence of two specific hospital-acquired conditions found that the Medicare non-payment policy resulted in a statistically significant decrease in vascular catheter-associated infections but the reduction in catheter-associated urinary tract infections were not statistically significant (Peasah et al., 2013). Therefore, work is still needed to improve outcomes.

The Institute for Healthcare Improvement (IHI) was founded in 1991 as part of the National Demonstration Project on Quality Improvement in Health Care. The IHI’s mission is to improve health and healthcare worldwide and the IHI has released many innovations and initiatives to support this work. One of these innovations is the triple aim – a framework to optimize health system performance by simultaneously pursuing three dimensions of care: improving the patient experience of care (which includes quality and patient satisfaction), improving the health of populations, and reducing the per capita cost of health care” (IHI, 2019b). Another innovation that is useful for nurse educators is the open school – an online educational community that provides training and tools to build core skills in improvement, safety, and leadership (IHI, 2019a).

Quality Improvement Concepts

Quality improvement in nursing uses data to monitor the outcomes of care processes and uses improvement methods to design and test changes to continuously improve the quality and safety of health systems. Quality improvement uses systematic, data-guided approaches such as Plan, Do, Study and Act (PDSA) cycles; six-sigma; and Lean methodologies to improve processes or outcomes. According to the International Council of Nurses (2012), QI “focuses on systems, processes and functional, clinical, satisfaction, and cost outcomes. QI projects may
contribute to understanding best practice or processes of care in which nurses are involved. QI is not designed to develop nursing practice standards or nursing science” (p. 6). As Conner (2014) mentioned, QI does not require extensive literature reviews and rigorous critical appraisal as does research and EBP. Therefore, QI can be used to address site or unit specific problems involving many nurses. The results of QI projects are meant to improve processes and outcomes for a specific unit or site and are not meant to provide generalized knowledge or best evidence.

Currently, several systematic approaches to QI are being utilized in healthcare organizations, including: Lean, Six Sigma, Lean Six Sigma, and change management processes (i.e., PDSA) (Joint Commission Center for Transforming Healthcare, 2014). An innovative way to reform nursing curriculum, as called for by the NLN, may be to include QI approaches such as Lean, Six Sigma, change management, Systems Thinking, or a blend of these approaches in the curriculum for prelicensure programs. An abundance of literature exists that describes how Lean, Six Sigma, Lean Six Sigma, and change management processes are being used to improve healthcare processes and organizations in the practice setting (De Koning et al., 2006; Edmond et al., 2013; Johnson et al., 2012; Joosten et al., 2009; Kimsey, 2010; Nelson-Peterson & Leppa, 2007; Simon & Canacari, 2012; Toussaint & Berry, 2013); however, little research was located on how these systems models were being utilized to teach nursing students about quality improvement.

The term “Lean” was coined by James Womack to describe Toyota’s business processes during the late 1980s. The core idea of Lean is maximizing value for customers while eliminating all waste from business (ASQ, n.d.a; Lean Enterprise Institute, 2009). Lean has identified eight mudas (wastes): (a)transport – moving people, products and information; (b) inventory – storing parts, pieces, documentation ahead of requirements; (c) motion – bending,
turning, reaching, lifting; (d) waiting – for parts, information, instructions, equipment; (e) over production – making more than is immediately required; (f) over processing – tighter tolerances or higher grade materials than are necessary; (g) defects – rework, scrap, incorrect documentation; (h) skills – underutilizing people’s capabilities, delegating tasks with inadequate training. Another waste that has been identified is waste of resources (Lean Enterprise Institute, 2009).

Although Lean principles have traditionally been applied to manufacturing, this process can be applied to every organization because it is not simply an approach for cost-reduction but rather a way of thinking for an entire organization. Lean is a cultural transformation that requires new attitudes, new skills, and new habits throughout the organization (Lean Enterprise Institute, 2009; Toussaint & Berry, 2013). Lean’s strength is its focus on the customer and increasing value-added activities (what the customer wants) while decreasing non-value-added activities (everything else or waste) (De Koning et al., 2006; Simon & Canacari, 2012).

Six Sigma began as a companywide QI process introduced by Motorola in 1987 (De Koning et al., 2006). Like Lean, Six Sigma is a method used for quality improvement. However, unlike Lean, Six Sigma uses organizational tools; statistical analyses; and the define, measure, analyze, improve, control (DMAIC) approach to problem-solving to drive process improvement. Six Sigma offers a rigorous approach to problem-solving that is structurally, analytically, and logically sound, and provides a strong organizational framework for its deployment (ASQ, n.d.b).

Systems thinking is an outgrowth of general systems theory; it can be applied to all systems to identify problems, components of the problem, and solutions to the problem. According to Senge (1990), systems thinking is a conceptual framework, a body of knowledge
and tools that have been developed to make full patterns clearer and help change these patterns effectively. With systems thinking individuals are challenged to focus less on day to day events and focus more on the underlying trends. The goal is to see the “big picture” (Kim & Senge, 1994). While systems thinking has enabled unprecedented growth in the fields of engineering, ecology, and economics; it has not been readily employed as a method to improve outcomes in healthcare organizations (Trbovich, 2014). Systems thinking within nursing practice and nursing education has potential to help expand nurses’ focus from the individual level to the organizational level, and to help them understand that any one component of their work system is related to the other components and ultimately the whole system (Batalden & Leach, 2009; Dolansky & Moore, 2013; Petula, 2005; Senge, 1990).

Lean and Six Sigma both have weaknesses. For Lean, weaknesses are the lack of focus on organizational infrastructure, QI, statistical analysis, deployment plans, and control. Six Sigma’s weaknesses are that it is very complex and does not address speed or optimum flow. These weaknesses may be addressed by a combination of Lean and Six Sigma known as Lean Six Sigma. Lean Six Sigma combines the best of both programs to offer a carefully managed process that systematically carries out innovative projects that can be taught, learned, and performed with great success (De Koning et al., 2006; Joint Commission Center for Transforming Healthcare, 2014). The use of Lean Six Sigma in healthcare has been supported by the Center for Transforming Healthcare (Joint Commission Center for Transforming Healthcare, 2014).
Nursing Practice

QI is essential to nursing practice as the nursing profession was established using principles of EBP and QI. Florence Nightingale, the founder of modern nursing, used statistics to prove (through measurement and evaluation) that the poor sanitary conditions she noticed in the treatment of soldiers in the Crimean war lead to increased deaths. And, she improved practice by implementing handwashing, among other hygiene practices, in the hospitals in which she worked. Today, many nursing organizations call for a focus on improving outcomes in nursing and healthcare. Therefore, QI should be included in nursing curriculum.

Influential Organizations

The American Nurses Association (ANA) has released two books that specifically mention QI as the role and responsibility of the registered nurse. The *Code of Ethics for Nurses with Interpretative Statements* – provision 4 states that: “the nurse has authority, accountability, and responsibility for nursing practice.” Part three of this provision explicitly states that “nurses must plan, establish, implement, and evaluate review mechanisms to safeguard patients, nurses, colleagues, and the environment” (ANA, 2015, p.16). These safeguards include quality improvement and research initiatives (ANA, 2015). And, in *Nursing: Scope and Standards of Practice*, Standard 10 states: The registered nurse contributes to quality nursing practice. The competencies associated with this standard mention that the nurse,

participates in quality improvement through activities such as identifying aspects of practice important for quality monitoring; using indicators and collecting data to monitor quality, safety, and effectiveness of nursing practice; analyzing quality data to identify opportunities for improving nursing practice; formulating recommendations to improve nursing practice or outcomes; and implementing activities to enhance the quality of nursing practice. (ANA, 2010. p. 52)
Therefore, the nursing profession has a responsibility to measure patient outcomes and to use QI processes to improve these outcomes.

At three million members, nurses represent the largest segment of the nation’s health care workforce. Further, as direct care providers, nurses influence many patient outcomes (IOM, 2011). Consequently, nurses are in a unique position to serve as change agents within health systems (Hall et al., 2008). Staff nurses are expected to be involved with collecting QI data on a regular basis. However, many practicing nurses do not graduate with the knowledge, skills, and/or attitudes necessary to move beyond the task of reporting. As a result, QI processes may not be effectively applied in practice. For example, Kovner et al. (2010) found that nearly 39% of new graduates thought that they were poorly or very poorly prepared to implement QI measures and were not at all prepared to use QI techniques.

With directives from the IOM, The Joint Commission, the AONE, and the AACN to have healthcare agencies utilize QI processes to improve outcomes, and with healthcare organizations seeking recognition for improving outcomes, it is important to review how QI is being utilized in nursing practice. Currently, the American Nurses Credentialing Center (ANCC), the AACN, and the National Database of Nursing Quality Indicators (NDNQI) have a major influence on the utilization of QI in nursing practice. This influence is exerted by the ANCC through its Magnet certification, the AACN through Commission on Collegiate Nursing Education (CCNE) accreditation, and the NDNQI through its reporting of structure, process, and outcome indicators.

The Magnet Recognition Program (operated by ANCC) was developed in the early 1990s to recognize excellence in nursing care, quality patient care, and innovations in professional nursing practice. Magnet’s conceptual model has five components: transformational leadership;
structural empowerment; exemplary professional practice; new knowledge, innovation, and improvements; and empirical quality results. Component number four (new knowledge, innovation, and improvements) includes the concept of QI (ANCC, 2016; Drenkard et al., 2011).

Healthcare organizations seek Magnet recognition because Magnet facilities provide high-quality nursing care with improved patient outcomes. These outcomes are improved because nurses within Magnet facilities are expected to utilize QI concepts to solve problems and improve processes (Drenkard et al., 2011).

The CCNE is responsible for the accreditation of academic institutions that offer baccalaureate and graduate nursing programs as well as nurse residency programs that support new graduate nurses in the transition to practice. Prior to 2016, the CCNE only provided accreditation for post-baccalaureate nurse residency programs. However, effective July 2016 the CCNE has expanded the nurse residency program accreditation to include all levels of beginning education for registered nurses, including ADN. Standard three of this accreditation addresses curriculum. One of the key elements within this standard is the understanding that the nurse residency program curriculum will expand the residents’ knowledge and skills acquired in their prelicensure programs. The expanded knowledge and skills pertains to analyzing and implementing best practices to safely deliver and manage patient care for quality patient outcomes. More specifically, the residents will use the institution’s quality improvement process to participate in quality improvement efforts (CCNE, 2015). Consequently, many hospital nurse educators who are responsible for these programs are assigned to teach QI concepts and application of QI processes to new graduates.

The NDNQI, established in 1998 by the ANA but currently run by Press Ganey is the only national nursing database that provides quarterly and annual reporting of structure, process,
and outcome indicators to evaluate nursing care at the unit level. More than 2,000 U.S. hospitals and 98% of Magnet-recognized facilities participate in the NDNQI program to measure nursing quality (NDNQI, 2015). The purpose of the NDNQI is to provide nurses with data for nursing-sensitive measures, or outcomes that nursing can directly influence through QI. Examples of data include patient falls, patient falls with injury, and pressure ulcer prevalence (Montalvo, 2007; NDNQI, 2015). The data that NDNQI reports allow nurses to assess the outcomes of QI processes they implement to improve outcomes for nursing-sensitive measures.

**Quality Improvement Studies**

During the course of this research, many studies were found that demonstrate how the use of QI processes by nurses can improve outcomes in healthcare organizations. Some studies researched how costs could be decreased using Lean principles. For example, Kimsey (2010) reported on the application of Lean principles to the sterile processing unit at Lehigh Valley Health Network that was scheduled for renovation and expansion. Using Lean principles, processes were changed, and equipment was serviced and updated, which resulted in a seven-minute decrease in sterilization time, increase sterilization capacity up to 60%, and saved 10 hours of work per day (Kimsey, 2010). In another example, Martin Health Systems in Stuart, Florida utilized the Lean principle of respect for front line workers to solve the problem of a shortage of intravenous (IV) pumps in the emergency department (ED). After process improvement efforts, the hospital was able to replace the existing pump inventory with 100 fewer units, which yielded a direct savings of $300,000. In addition, the total nursing time spent gathering supplies was reduced by 34 hours per day (Toussaint & Berry, 2013).
Other studies described how additional QI projects were used to improve processes, clinical outcomes, and patient satisfaction. Godley and Jenkins (2019) used Lean Six Sigma’s define, measure, analyze, improve, and control (DMAIC) framework with a pre- and post-intervention design to decrease wait times and improve patient satisfaction. After implementing the recommendations, there was a statistically significant decrease in wait times (P < .0019) and an increase in patient satisfaction scores in three area: registration wait times, test/treatment, and likelihood to recommend.

St. Jude Medical Center in Fullerton, California used the PDSA method to schedule radiology appointments. They implemented a morning huddle and reported that the telephone wait time decreased from 20 minutes to less than one minute and the dropped call rate decreased from 17-20% to less than three percent. These improvements occurred with no increase in staffing (Toussaint & Berry, 2013).

A healthcare system in Delaware formed a multiunit restraint collaborative consisting of bedside nurses, nurse educators, clinical nurse specialists, and nurse managers from units that experienced high use of physical restraint use. The purpose of the project was to reduce the mean rate of use of physical restraints in five intensive care units (ICUs) to less than the National Database of Quality Indicators (NDNQI) mean. After reviewing restraint data, surveying staff nurses to examine their alignment with evidence-based practice, and selecting a restraint-alternative product, all five ICUs were able to decrease physical restraint rates to less than the NDNQI mean (Mitchell et al., 2018)

Inova, an integrated health system in Virginia, utilized value stream mapping to address flow issues in intake and triage in its nine emergency departments. After several changes, such as allowing physicians to see patients before the nurse did, and new standards of three-minute
registration and three-minute triage, the length of stay for discharge patients decreased from 215 to 135 minutes, time waiting to see a physician decreased from 55 to 22 minutes, diversion to other EDs decreased from 1300 hours annually to approximately 50 hours, and patient satisfaction increased from the 60th percentile to the 80th percentile (Toussaint & Berry, 2013).

Fujita and Choi (2020) described how they implemented a QI study to improve the safe use of alarms in an Emergency Department. In this QI project they adjusted the default alarm settings, educated staff on managing alarms, and emphasized staff accountability. After they implemented the project they found a significant change in the rate of alarm events that occurred with an estimated reduction of 14.96 (p=0.003). There were also no reports of adverse outcomes due to a delay in responding to a change in patient condition.

J. Johnson et al. (2012) advise that if nurses are to be active in the transformation of the United States healthcare system, then nursing education must change. One way to initiate this change is to revise traditional curriculum to include a variety of quality improvement processes such as organizational development (the study of successful organizational change), Lean principles, Six Sigma, PDSA, and systems thinking. Kirby and Good (2020) described how they incorporated a Lean healthcare QI project into a BSN curriculum by collaborating with personnel at a local healthcare organization. In this project a group of students in their sophomore and junior years worked in teams using a fishbone diagram to identify the barriers to patient compliance with wearing sequential compression devices (SCDs). The project took place at a hospital that is a practice partner with the nursing school. After completing the project, students reported that they felt empowered to apply their knowledge to affect patient outcomes, enjoyed giving back to their community partners, and acquired fundamental knowledge about QI.
Evidence-based practice in nursing is defined as “a problem-solving approach to clinical decision making that incorporates a search for the best and latest evidence, clinical expertise and assessment, and patient preference values within a context of caring” (International Council of Nurses, 2012, p. 6). The purpose of EBP is to use the best available research to make patient-care decisions and change clinical practice. EBP involves the following steps: asking clinical questions, searching for evidence, collecting the most relevant best evidence, critically appraising the evidence, integrating the evidence with one’s clinical expertise, and evaluating outcomes of the practice decision or change made on the evidence (Stokke et al., 2014).

Evidence-based practice is not the same as research. Research focuses on developing new knowledge or validating existing knowledge. However, EBP is about translating the evidence/knowledge and applying it to clinical decision-making (Baker et al., 2014; Conner, 2014; Fitzpatrick, 2016). EBP is also different than QI which uses systematic, data-guided approaches such as PDSA cycles, Six Sigma, and Lean methodologies to improve processes or outcomes. QI can be utilized to monitor and evaluate the quality and appropriateness of care based on EBP, but it can also be used to improve processes and ultimately outcomes (Baker et al., 2014; Conner, 2014; Fitzpatrick, 2016). QI does not require extensive literature reviews and rigorous critical appraisal as does research and EBP (Conner, 2014).

Evidence-based practice is rooted in the premise that patient care should be informed by sound evidence. Thus, it is crucial that nurses are proactive in their quest for research knowledge (Mackey & Bassendowski, 2017). As a result, practicing nurses are encouraged to incorporate EBP into their work. Stokke et al. (2014) explored self-reported beliefs towards EBP and EBP
implementation among 185 nurses. They found that most nurses believe using evidence-based practice contributes to more positive outcomes for patients; however, many also said that they did not use evidence consistently and were not confident about how it should be implemented in practice. Consequently, nurses need further training on how to use and implement EBP. (Mackey & Bassendowski, 2017).

EBP is a way to bridge the theory practice gap. According to the International Council of Nurses (2012), evidence-based practice is a way for the nursing discipline to minimize the disconnect between what is taught in schools of nursing and what is put into practice. Thus, EBP education and training should begin in schools of nursing.

Curriculum Design

Curriculum is considered the heart of educational institutions and is crucial for the success of higher education (Kahn & Law, 2015). Therefore, developing and implementing curriculum is important. Curriculum design is a way to conceptualize and arrange curriculum into its major components and provide direction during curriculum development. The major components of curriculum design include subject matter or content, instructional methods and materials, and learner experiences or activities (Hunkins & Ornstein, 2016).

Curriculum theory has been shaped by a distinction between the explicit or formal and the hidden or informal curriculum (Lubbe, 2017). The explicit curriculum is constructed around formally stated content, courses, lessons, learning activities, and outcomes (Morrow, 2009; Shay, 2013). However, the hidden curriculum refers to the unwritten, unofficial, and often unintended lessons, values, and perspectives that students learn in school (Morrow, 2009). What students learn in school extends beyond the formal curriculum because while curriculum specialists
generally agree on the foundations of the curriculum design (philosophical, historical, psychological, and social), they often disagree on curriculum’s knowledge domains or the accepted knowledge within the field presented in published articles and books (Hunkins & Ornstein, 2016).

Curriculum is influenced by the social, physical, economic, and cultural environment. Further, the discipline, institutional, national, and international contexts impact what is incorporated into the curriculum. In fields where the contextual influences change rapidly, such as nursing, the curriculum should also be able to change quickly (Waterson et al., 2006). However, adding more content without deleting less relevant or outdated content will result in content overload.

**Content Overload**

According to Hunkins and Ornstein (2016), for most of the 20th century, teachers were content oriented, and metrics such as content covered, facts cited, grades passed, tests taken, scores attained, goals reached, and standards attained were used to determine educational success and student achievement. However, these past metrics have misled educators in their quest for excellence in the 21st century.

Content overload, also known as curriculum overload, occurs when new content gets added to a curriculum without deleting outdated or less relevant content (Forbes & Hickey, 2009; Waterson et al., 2006). The undergraduate curriculum is ‘over-crowded’ to serve multiple purposes driven by vested interests and power from outside the discipline (Ho, 2016). According to Giddens and Brady (2007), a shift from the industrial age to the information age, changes in health care delivery, teacher-centered pedagogy, content repetition, and the academic-practice
gap have resulted in content overload in nursing education. A study by Adewuyi et al. (2018) identified content overload as the most significant challenge to integrating dementia care content into prelicensure nursing curriculum. Likewise, Dalley et al. (2008) found that most nurse educators attending their presentations said they have too much to teach and too little time to teach it.

Hunkins and Ornstein (2016) do not advocate scrapping these metrics. Rather, they encourage new metrics to accompany these well-accepted metrics. They believe it is important to cover content but caution that covering content may not indicate student knowledge and understanding. They also question if knowledge as defined in the 20th century is adequate for judging educational quality in the 21st century. Curriculum designs should focus more on students and less on content (Hunkins & Ornstein, 2016).

**Concept-Based Curriculum**

The concept-based curriculum (CBC) was introduced in the mid-2000s and builds upon constructivism, which assumes that people construct their own knowledge of the world by reflecting on their experiences (Sportsman & Pleasant, 2017). In a CBC, content is deemphasized, students are engaged in activities to foster critical thinking, and concepts are presented across the lifespan and reinforced throughout the program (Giddens et al., 2008).

The goal of the CBC is to get away from teaching the facts for every health issue or every patient population in a piecemeal approach. Rather, a CBC is designed around global concepts critical to individuals, nursing practice, and health care. The concepts are not based on any one theory, but rather reflect contemporary literature and practice trends in health care (Giddens et al., 2012). In a CBC, students learn about concepts broadly - such as oxygenation, safety,
healthcare quality, infection control, communication, and ethics. Furthermore, students are taught how to apply concepts to different patient populations such as pediatrics and mental health (Trossman, 2015).

Hensel (2017) examined the impact that a CBC would have on students’ confidence in caring for pediatric patients. In this study baccalaureate nursing students enrolled in their capstone course were divided into two samples. The first sample included 34 students from the last cohort of the health alterations curriculum. The second sample included 34 students enrolled in the concept-based curriculum. All participants were shown photographs from different patient settings (i.e., acute care, community-based, primary care, and extended care) and in different stages of lifespan (i.e., maternal-newborn, pediatric, adult, and older adult patients). Participants were asked to consider if they saw themselves caring for the type of patient on the card early in their nursing career. Participants from the concept-based curriculum averaged agreeing (mean, 19.91 [SD, 8.49]) more than they disagreed (mean, 13.7 [SD, 6.19]) that they might care for patients portrayed in the images early in their nursing career. Whereas, participants from the health alterations curriculum placed more cards in the disagree pile (mean, 20.6 [SD, 7.53]) more than the agree pile (mean, 12.5 [SD, 5.39]), suggesting that they saw themselves caring for a narrow range of patients. Because participants from the health alterations curriculum viewed themselves caring for a narrower range of patients than those from the concept-based curriculum the author concluded that the curriculum revisions were successful in helping students to feel more prepared to work in diverse health care environments.

Repsha et al. (2020) completed a systematic review of the literature to assess the impact of a CBC. They reviewed 23 peer-reviewed articles published between 2008 and 2018 on transitioning to a CBC. Results demonstrated that although transitioning to a CBC has significant
challenges in organization, time, and faculty support; it also supported a more interactive learning environment, student-centered teaching, and streamlining of course content.

Nursing Education

O’Neill (2015) outlined four contexts that influence curriculum planning: international, national, institutional, and program contexts. The contextual influences are challenging to understand because they are constantly changing and are unique to the program, time, place, and the persons involved. Therefore, curriculum design and subsequent change to curriculum is a complicated process, with many levels on which changes must be approved and implemented. Further, many stakeholders are involved in the process including state governments, local communities, governing boards, curriculum committees, and faculty. The challenges of curriculum change for ADN faculty are best understood by examining the processes of curriculum change within both community colleges and nursing education.

Curriculum Change in Community Colleges

Although some common ground exists regarding curriculum change in community colleges, it tends to be specific to each state and each community college within that state. Community colleges within a given state share a common mission and have the same rules and regulations for program approval and curriculum revision. However, usually the locally elected boards of trustees set policies that guide their colleges in achieving local and statewide goals (ICCB, 2014).

Within the state where this study took place, commonalities exist for curriculum change at community colleges. First, faculty must agree on curriculum changes that affect the respective
program. Second, proposed curriculum changes must be submitted to a curriculum commission/committee within the community college for approval. This curriculum committee is responsible for reviewing the suggested changes to ensure that they meet state guidelines. After the curriculum commission/committee approves the changes, the proposal must be sent to the state’s coordinating agency for higher education for final approval (ICCB, 2014).

Career programs, such as ADN programs, must work with additional entities in the curriculum change process. First, they must contemplate the requirements that must be met to maintain accreditation. Second, they must meet state curriculum requirements. Third, they must seek the input of respective advisory committees (which include local stakeholders such as employers, community members, and local businesses). These additional influences help ensure that career programs at a community college meet the high standards of accrediting agencies and are responsive to the local communities they serve.

Curriculum Change in Nursing Education

The NCSBN is an independent, not-for-profit organization through which boards of nursing work together on matters of common interest and concern affecting public health, safety and welfare. The NCSBN protects the public through regulatory processes, such as ensuring that new graduate nurses have the necessary knowledge and skills to practice registered nursing in the United States (Nunn-Ellison et al., 2020). One function of the NCSBN is to develop the NCLEX-RN exam (NCSBN, 2016). Nursing candidates must perform above the passing standard on the NCLEX-RN exam in order to attain their licenses as registered nurses (NCSBN, 2016). A minimum number of a college’s nursing graduates must pass the NCLEX-RN exam as mandated by the state board of nursing (Carrick, 2011). Low pass rates on the NCLEX-RN exam
may cause the respective college to experience difficulties in maintaining Board of Nursing approval, accreditation, funding, reputation, and the ability to recruit students (Davis et al., 2013). Furthermore, schools of nursing are concerned that their pass rates will drop with the introduction of the new Next Generation NCLEX (Caputi, 2019; Siegel, 2019; Stoll et al., 2020).

The Next Generation NCLEX (NGN) project began in 2012 when members of the NCSBN questioned if the NCLEX was measuring the competencies needed by entry-level nurses (Hensel & Billings, 2020; Nun-Ellison et al., 2020; Poorman & Mastorovich, 2020). The NGN committee determined that although the current NCLEX measures clinical judgement, the test could be improved to measure it more effectively. Thus, the NCSBN developed a clinical judgement model (CJM) that recognizes the complexities of a nurse’s work (Hensel & Billings, 2020). The CJM includes recognizing clues, analyzing clues, prioritizing hypotheses, generating solutions, taking actions, and evaluating outcomes (Poorman & Mastorovich, 2020). After the NCSBN had a model that could measure clinical judgment, it began writing prototype text items that included extended multiple response, hotspot/highlighting, drop-down, matrix, and extended drop-and-drag items (Hensel & Billings, 2020). The NGN NCLEX is anticipated to begin in 2022 and will be designed to test students’ problem-solving abilities (Poorman & Mastorovich, 2020). Many nurse educators are concerned about preparing nursing students for this new NCLEX (Caputi, 2019; Siegel, 2019; Stoll, et al., 2020).

Numerous external professional bodies have called for the integration of the patient safety and quality competencies mentioned in the IOM reports into nursing curriculum (AACN, 2008; AONE, 2010; NLN, 2003; NLN, 2005; QSEN, n.d.). Three organizations that are well known within nursing profession for their contributions to nursing education are the American Association of Colleges of Nursing (AACN), the National League for Nursing (NLN), and
Quality and Safety Education for Nurses (QSEN). These organizations have recognized the importance of preparing future nurses to work within an increasingly complex healthcare system, and they have called for the integration of QI concepts into the nursing curriculum. Further, they have developed guidelines for nursing education to address the IOM recommendations (AACN, 2008; NLN 2010, QSEN, n.d.).

In 1986 the American Association of Colleges of Nursing (AACN) released *The Essentials of Baccalaureate Education for Professional Nursing Practice* to guide curriculum design for Bachelor of Science Nursing (BSN) programs. These nine essentials outline the outcomes expected of BSN graduates (Forbes & Hickey, 2009). The Essentials were revised in 2008 to address the recommendations of key stakeholders, and the IOM recommendation of applying QI. These new essentials state that the BSN graduate will have the knowledge and skills in leadership, patient safety, and quality improvement necessary to provide high-quality care (AACN, 2008). The Essentials of Baccalaureate Education are important in BSN curriculum because of their key components. They define the role of the baccalaureate prepared nurse, provide professional values for baccalaureate nursing education, offer an outline of essential curriculum contents, list Baccalaureate core competencies and knowledge, and suggest teaching strategies. The AACN also provides a tool kit for faculty which offers integrative learning strategies, opportunities for program enhancement, and resources that will assist faculty with the integration of the Baccalaureate Essentials throughout the nursing curriculum (AACN, 2009).

The NLN is the “voice for nursing education.” Its mission is to promote excellence in nursing education. To accomplish this mission the NLN: advocates for nursing education through public policy initiatives; accredits nursing programs; offers recognition, professional development, research grants, and certification for nurse educators; and provides resources and
networking opportunities to their members (NLN, n.d.). In 2010, the NLN developed a set of competencies for graduates of nursing programs. These competencies are designed for Practical/Vocational, Diploma, Associate Degree, Baccalaureate, Masters, Practice Doctorate, and Research Doctorate Programs in Nursing and include two integrated concepts that relate to QI: context and environment (which includes QI) and quality and safety (which includes a systems perspective) (NLN, 2010).

Since 2005, the Robert Wood Johnson Foundation has funded the QSEN project to address the challenge of educating nursing students who will be prepared to utilize QI to improve the health systems in which they work. QSEN has urged nurse educators to integrate the competencies they established (patient-centered care, evidence-based practice, teamwork and collaboration, safety, quality improvement, and informatics) into nursing curriculum. As of 2013, many nursing programs have integrated QSEN competencies into their curriculum. Several studies were located in this literature review that described how prelicensure curriculum was revised to incorporate the OSEN competencies into nursing curriculum (Barnsteiner et al., 2012; Brady, 2011; Hickey et al., 2010; Kumm & Fletcher, 2012; Lewis, 2012; Thornlow & McGuinn, 2010). For example, Smith et al. (2007) found that 95% of nurse educators in prelicensure programs believed that they included content related to each competency in their program.

Although the QSEN competencies have been integrated into nursing curriculum, concerns have been voiced that the competencies have not impacted the quality and safety of care at the level initially anticipated (Dolansky & Moore, 2013). Further, many nursing organizations and researchers have recognized that nursing graduates are poorly prepared to implement QI measures (IOM, 2010, 2011, Kovner et al., 2010; NLN 2003, 2005; Phillips et al., 2013). This issue is more prevalent for graduates of ADN programs (Djukic et al., 2019).
Therefore, significant changes in nursing curriculum are required if students are to graduate with beginning levels of competence in QI (Thornlow & McGuinn, 2010). A review of the literature by Forbes and Hickey (2009) found that the suggested curriculum reform has been focused on four areas: incorporating safety and quality competencies into nursing education, redesigning conceptual frameworks, reducing content-laden curriculum, and teaching using alternative pedagogies. A persistent problem has been that many nurse educators lacked the education and experience to implement the necessary changes to the curriculum (Cronenwett et al., 2007; Sherwood & Drenkard, 2007).

According to the IOM, the ways that nurses were educated in the 20th century are no longer adequate for dealing with the realities of the more complex care environments found in the 21st century (IOM, 2010). However, nurse educators continue to teach how they were taught (Phillips et al., 2013). Smith et al. (2007) found that nurse educators primarily used readings and lectures to teach QI. Less than 40% used more innovative strategies of problem-based learning, inter-professional learning, simulation, and return demonstration. Further, many nurse educators have dealt with the rapid growth of health research and knowledge by adding layers of content to the curriculum. Yet, merely discussing QI content is ineffective; rather, faculty should seek ways to actively engage students in learning QI and develop new partnerships in the practice setting to allow for the application of QI (Cronenwett et al., 2007; IOM, 2010). Another suggestion for curriculum reform specific to QI is that nurse faculty should utilize systems thinking. Systems thinking can help nurses move beyond the application of QSEN competencies for individual patients to the application of the QSEN competencies for the overall improvement of healthcare quality and safety (Doalnsky & Moore, 2013).
The NLN has also recognized the need for curriculum reform in nursing education and has advocated for a change in nursing education through dramatic reform and innovation in two ways (Forbes & Hickey, 2009; NLN, 2003, 2005). First, the NLN, like the IOM, has urged nursing education to move from content coverage toward a focus on program and student learning outcomes. The goal is to design evidence-based curriculum that involve students with active participation, are flexible and responsive to students’ needs, promote collaboration, and help students learn to provide skillful and compassionate care in changing healthcare environments (NLN, 2003). Second, the NLN has asked nurse faculty to demand resources for the professional development needed to cultivate the innovative pedagogy that is necessary for the dramatic change desired in nursing education (NLN, 2005). However, the NLN has not prepared a faculty tool kit for ADN faculty like the BSN Essentials that would assist ADN faculty with the integration of QI concepts into curriculum.

According to Phillips et al. (2013), few substantive nursing curriculum innovation studies have been published. Therefore, Phillips et al. (2013) conducted a retrospective qualitative study of nurse educators to describe what innovations faculty were using, identify the challenges the faculty faced, and explore how the curriculum were evaluated. The authors also found that collaboration with practice partners/community agencies, support from administration, and preplanned evaluation of curriculum changes are necessary when implementing innovative curriculum changes. They also reported that a problem in curriculum development is that evaluation is not performed at the beginning of the innovation.

The literature was reviewed to find studies that used innovative curriculum reform to teach QI concepts. A study was found that discussed how one university was using a creative way to teach QI methodologies to their students (Flores et al., 2013). This university had created
an academic-practice partnership that allowed their students to work collaboratively with hospital staff performance improvement preceptors to teach the recently mandated quality improvement methodologies. In this program the Plan, Do, Check, Act model was used to implement priority QI activities at the partner hospital. After four semesters of partnership, 13 projects have been completed, the results of one project have been published, and the students have disseminated the findings from their other projects via poster or podium presentations.

**Barriers to Implementation**

Faculty are aware of and concerned about the implications of the 2001 IOM *Quality Chasm* report (Cronenwett et al., 2007). In fact, 38% of faculty responding to a survey reported that they would like to include more content in this area (Smith et al., 2007). However, faculty feel unprepared to teach QI concepts and/or demonstrate them in practice. This feeling is because they lack the requisite expertise and education to do so (Barnsteiner et al., 2013; Cronenwett et al., 2007). These findings should not be surprising because most nurse faculty completed their education prior to the emphasis on quality and they likely were not adequately prepared to teach QI concepts and applications (Sherwood & Drenkard, 2007). Other barriers to curriculum change are faculty resistance to change, faculty opposition to deleting content, and lack of time due to workload responsibilities (Hickey et al., 2010). Therefore, arguments can be made that barriers to curriculum change may be best overcome by providing additional support to nursing faculty that targets these hurdles.
Resources for Implementation of Quality Improvement into Curriculum

Nurse faculty should possess the requisite skills, knowledge, and abilities to participate in QI initiatives. Yet, as previously mentioned, many faculty often lack the expertise to apply QI and subsequently teach the application of QI to students (Cronenwett et al., 2007). The NCSBN offers a QI module which nurses can take to learn more about using available data to identify and prioritize health care improvement, to use quality improvement systems such as Lean and Six Sigma, and to develop an implementation plan for QI. Such a module could be a beginning point for nurse faculty to increase their understanding of QI. In addition, QSEN provides many educational tools to help facilitate the integration of their competencies. For example, over 100 teaching strategies are posted on the QSEN website (Doalnsky & Moore, 2013). Likewise, QSEN competencies have been incorporated into nursing textbooks.

The NLN also offers faculty professional development courses on teaching strategies and has several toolkits on its website. One of these toolkits, devoted to innovation in curriculum design contains a curriculum report card, a resources sections, and exemplars in teaching strategies and curriculum design (NLN, n.d.).

Theory Practice Gap

Another area to consider in relation to teaching QI is the theory to practice gap occurring in nursing. This ‘practice readiness’ is not a new concern for nurses -- in the 1970s employers claimed that the clinical experience that students received in prelicensure nursing programs was not adequate, and nurse educators claimed that employers’ expectations of new graduates were unrealistic (Wolff et al., 2010). Nursing has advanced from an occupation based on tradition to
an evidence-based profession, and concerns are being raised about the apparent disconnect between best practice and actual practice; a concern referred to as the research-practice gap (Leach & Tucker, 2018). The National Council of State Boards of Nursing (n.d.) mentions this gap in its report *Transition to Practice*. Also the Joint Commission has mentioned that nursing education and nursing practice must better align the education and practice environments to ensure that new graduate competencies more closely match practice needs (Thornlow & McGuinn, 2010). Many studies have analyzed the practice gap, and these studies have focused on different areas of the problem.

Wolff et al. (2010) researched what nurses in three sectors, education, practice, and the regulatory setting meant by “readiness to practice.” Using focus groups and semistructured interviews, one hundred and fifty nurses from the different sectors participated. The researchers found that three broad themes about readiness to practice emerged: (1) new graduate nurses obtain entry-level competencies; and some job-specific capabilities to meet immediate workforce needs; (2) new graduate nurses are competent to provide safe patient care and adapt to new and changing circumstances in healthcare; and (3) new graduate nurses possess a balance of doing, knowing, and thinking.

Hickey (2009) surveyed nurse preceptors about new graduate readiness for practice using a specific set of criteria. She found that although preceptors believe students are adequately prepared, improvement is needed, specifically in the areas of advanced skills, prioritization, organization, managing a group of patients, critical thinking, problem-solving, and clinical decision making. Students need to be better prepared to deal with the nature of nursing practice in today’s healthcare setting.
Feng and Tsai (2012) researched the socialization of new graduate nurses to practicing nurses and found that this transition was stressful for new graduates. They found that the participants reported a conflict involving what they learned about the professional values of nursing, patient-centered care, and the organizational value of completing tasks. Therefore, misalignment occurred involving their learning in school and the expectations of nursing practice.

Summary of the Literature Review

Healthcare and nursing organizations have made urgent pleas to focus on healthcare reform. Indeed, the IOM, Joint Commission, and AONE have all called for a focus on quality, safety, and outcomes. One way to improve quality in healthcare is through a focus on QI. Proven QI processes (i.e., Lean, Six Sigma, systems thinking, and change management processes) have potential to improve outcomes in healthcare organizations. However, a gap exists between what nursing schools teach and what clinical practice dictates. This literature review has identified several related areas (QI concepts, nursing policy, nursing practice, nursing education, and theory-practice gap) that support the need for additional research. Appendix A provides a synopsis of the significant reports that were noted in this literature review and that provide a backdrop for this current study. This study examines ADN faculty perspectives regarding the integration of QI concepts into nursing curriculum. Findings of this study lend insight into how nurse faculty in community colleges teach students about QI.
CHAPTER THREE
METHODOLOGY

A review of the literature revealed an abundance of information describing the need to incorporate QI into nursing curriculum; however, ADN faculty’s perspectives regarding integration of QI concepts into nursing education curriculum are missing. The central focus of this study was to explore ADN faculty’s perspectives regarding the integration of QI concepts into nursing curriculum.

A qualitative methodology was used in this study to give voice to the opinions and attitudes of the ADN faculty who shared their perspectives in the interviews. Qualitative methodology allows the researcher to explore and understand the meaning that individuals attribute to a social or human problem. Further, qualitative methods enable the researcher to use inductive reasoning to make interpretations of the meaning of the data (Creswell, 2014; Merriam, 2009).

This chapter presents the research design, research questions, sampling procedures, and participant information. This chapter also details the processes used for data collection and data analysis. Finally, trustworthiness of the data and the researcher positionality are considered.

Research Design

Qualitative research is used to understand the meaning individuals have constructed for their world based on the experiences they have in the world. The primary goal of qualitative research is to uncover and interpret these meanings (Merriam, 2009). Within the realm of
five common designs: narrative research, phenomenology, grounded research, ethnography, and case study (Creswell, 2014). Phenomenology is focused on the lived experiences of individuals. Phenomenologists seek to understand how people interpret their experiences. This type of research allows the researcher to uncover the essence or basic structure of a phenomenon (Merriam, 2009). In a phenomenological design the researcher presents an understanding of the essence of the experiences or phenomenon as described by the participants (Creswell, 2014). Because the goal was to understand the phenomenon of teaching QI to ADN students from the ADN faculty’s perspective, elements of phenomenology supported the research design.

Research Questions

The central questions of this research are:

1. What are ADN faculty views on the integration of QI concepts into nursing curriculum?
2. What do participants identify as barriers to the integration of QI concepts into nursing curriculum?
3. What have participants come to believe about innovative teaching methods, curriculum design, and teaching QI?

Participants and Settings

This study used purposive sampling with the following inclusion criteria. The participants were full-time ADN faculty who taught both the clinical and classroom portions of nursing courses in a Midwest state and who were within a two-hour drive of the researcher. I chose full-time ADN faculty, as opposed to part-time ADN faculty, because full-time faculty are
accountable for the development and evaluation of the curriculum. Further, I included only ADN faculty because this group of nurse educators has a different set of instructions for curriculum development compared to BSN faculty (i.e., the NLN competencies versus the Essentials of Baccalaureate Education for Professional Nursing Practice). I limited the sample to one state because nursing programs within a given state are under the same nurse practice act and consequently must adhere to the same rules and guidelines. I chose faculty with both classroom and clinical teaching responsibilities. This criterion was based on my assumption that these faculty would be current with the issues, challenges, policies, forces, and practices encountered in the clinical setting. Finally, I selected faculty in ADN programs within two hours of the researcher to facilitate face-to-face interviews.

Demographic characteristics such as gender, race, ethnicity, religion, age, clinical background, and years of teaching experience did not influence participant selection. However, I asked the participants about the number of years they had taught full-time in their current ADN program and the number of years they had been an RN. Likewise, I asked them to share information about their clinical experience(s)/expertise, the courses they currently taught, and if they were presently working in the clinical setting in addition to teaching. Table 2 provides the demographic characteristics of the participants. The numbers were reported as ranges to protect the anonymity of the participants.

Thirteen community colleges/ADN programs met the sampling requirements for location. I emailed the nurse administrators of these 13 ADN programs and asked them to provide the contact information for full-time ADN faculty members who teach both theory and clinical components. Administrators from seven ADN programs replied to my requests. I wanted a broader representation of ADN programs, so I emailed nurse faculty from the six other
Table 2

Research Participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Years teaching full-time in ADN program</th>
<th>Years as an RN</th>
<th>Type of clinical experience</th>
<th>Courses currently being taught</th>
<th>Currently working in the clinical setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molly</td>
<td>6-10</td>
<td>&gt;30</td>
<td>medical-surgical unit, critical care unit and invasive cardiology</td>
<td>medical-surgical nursing and leadership/management</td>
<td>No</td>
</tr>
<tr>
<td>Chris</td>
<td>0-1</td>
<td>10-15</td>
<td>emergency department</td>
<td>pathophysiology and health assessment</td>
<td>No</td>
</tr>
<tr>
<td>Liz</td>
<td>11-15</td>
<td>10-15</td>
<td>medical-surgical unit, psychiatric nursing and school nursing</td>
<td>medical-surgical nursing, mental health nursing, and leadership/management</td>
<td>No</td>
</tr>
<tr>
<td>Barb</td>
<td>0-1</td>
<td>15-20</td>
<td>pediatrics, public health nursing and neonatal intensive care unit</td>
<td>pediatric nursing</td>
<td>No</td>
</tr>
<tr>
<td>Nancy</td>
<td>2-5</td>
<td>10-15</td>
<td>medical-surgical unit and oncology</td>
<td>medical-surgical nursing</td>
<td>No</td>
</tr>
<tr>
<td>Carly</td>
<td>2-5</td>
<td>10-15</td>
<td>labor and delivery unit</td>
<td>maternity nursing</td>
<td>No</td>
</tr>
<tr>
<td>Amanda</td>
<td>6-10</td>
<td>20-25</td>
<td>oncology, human immunodeficiency virus (HIV) nursing, cardiac step-down, cardiac catheter lab and sales</td>
<td>medical-surgical nursing</td>
<td>No</td>
</tr>
<tr>
<td>Lauren</td>
<td>6-10</td>
<td>10-15</td>
<td>intensive care unit and family practice nursing</td>
<td>fundamentals of nursing, maternity nursing and mental health nursing</td>
<td>Yes</td>
</tr>
<tr>
<td>Cindy</td>
<td>6-10</td>
<td>15-20</td>
<td>intensive care unit</td>
<td>medical-surgical nursing</td>
<td>Yes</td>
</tr>
<tr>
<td>Jessie</td>
<td>26-30</td>
<td>&gt;30</td>
<td>pediatrics and mental health</td>
<td>pediatric nursing</td>
<td>No</td>
</tr>
<tr>
<td>Emma</td>
<td>26-30</td>
<td>&gt;30</td>
<td>telemetry unit, cardiac catheter lab and cardiac rehab</td>
<td>fundamentals of nursing and medical-surgical nursing</td>
<td>No</td>
</tr>
<tr>
<td>Sara</td>
<td>11-15</td>
<td>&gt;30</td>
<td>medical-surgical unit, pediatrics and Joint Commission surveyor</td>
<td>chronic illnesses</td>
<td>No</td>
</tr>
<tr>
<td>Kelsey</td>
<td>2-5</td>
<td>20-25</td>
<td>public health, medical-surgical nursing and recovery room</td>
<td>medical-surgical nursing and mental health nursing</td>
<td>No</td>
</tr>
<tr>
<td>Sheila</td>
<td>6-10</td>
<td>25-30</td>
<td>medical-surgical unit, cardiac surgery step-down, telemetry and emergency department</td>
<td>Fundamentals of nursing and role transition</td>
<td>No</td>
</tr>
</tbody>
</table>
Community colleges directly. At this time, I recognized another community college that met the sampling requirements and emailed the administrator from that college. In total, I obtained permission for interviews from fourteen participants from eleven different community colleges. Information about the community colleges included in this study is found in Table 3.

Table 3
Community College Statistical Data

<table>
<thead>
<tr>
<th>Institution</th>
<th>ADN degrees FY16</th>
<th>Enrollment in nursing FY16</th>
<th>Total graduates for all degrees awarded FY16</th>
<th>Total full-time faculty FY16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50-74</td>
<td>200-300</td>
<td>2000-3000</td>
<td>100-149</td>
</tr>
<tr>
<td>2</td>
<td>125-150</td>
<td>&gt;1500</td>
<td>6000-7000</td>
<td>250-300</td>
</tr>
<tr>
<td>3</td>
<td>75-99</td>
<td>200-300</td>
<td>3000-4000</td>
<td>100-149</td>
</tr>
<tr>
<td>4</td>
<td>25-49</td>
<td>100-200</td>
<td>&lt;1000</td>
<td>&lt;100</td>
</tr>
<tr>
<td>5</td>
<td>50-74</td>
<td>200-300</td>
<td>2000-3000</td>
<td>100-149</td>
</tr>
<tr>
<td>6</td>
<td>50-74</td>
<td>500-600</td>
<td>2000-3000</td>
<td>100-149</td>
</tr>
<tr>
<td>7</td>
<td>50-74</td>
<td>200-300</td>
<td>3000-4000</td>
<td>175-200</td>
</tr>
<tr>
<td>8</td>
<td>25-49</td>
<td>100-200</td>
<td>1000-2000</td>
<td>100-149</td>
</tr>
<tr>
<td>9</td>
<td>75-99</td>
<td>400-500</td>
<td>4000-5000</td>
<td>200-249</td>
</tr>
<tr>
<td>10</td>
<td>25-49</td>
<td>300-400</td>
<td>1000-2000</td>
<td>&lt;100</td>
</tr>
<tr>
<td>11</td>
<td>125-150</td>
<td>500-600</td>
<td>3000-4000</td>
<td>200-249</td>
</tr>
</tbody>
</table>

I conducted a pilot interview via telephone before the sampling process began to help refine the interview questions. The participant for the pilot interview did not meet the sampling requirements mentioned above. Although she was a full-time faculty in an ADN program, she did not teach the clinical portion of the course. Also, she was from a different state and was not within a two-hour drive of the researcher.
Data Collection

Qualitative data consist of information obtained from interviews, recorded observations, and various types of curricular documents. Qualitative data are portrayed through words. In most applied fields, and especially in education, interviewing is the most common form of data collection in qualitative studies (Merriam, 2009). However, qualitative researchers usually gather multiple forms of data rather than rely on a single data source as this strategy adds to the credibility or validity of the study (Creswell, 2014; Merriam, 2009). I used interviews and documents as data sources for this study.

Semistructured In-Depth Interviews

Interviewing is a fundamental mode of inquiry and telling stories has been a significant way throughout recorded history that humans have made sense of their experiences (Seidman, 2012). Further, interviews are common in qualitative research as they allow the researcher to explore a phenomenon from the participant’s perspective (Creswell, 2014). In-depth interviews involve the posing of open-ended questions and follow-up probes designed to obtain an in-depth understanding of participants' experiences, perceptions, opinions, feelings, and knowledge (Merriam, 2009).

According to Seidman (2012), a researcher can use observation, exploring history, experimentation, questionnaires, surveys, and interviews as data sources. He goes on to explain that a researcher should choose a data source that most accurately addresses the questions being asked. For example, if a researcher wants to know how a student behaves in the classroom, then observation might be the best method of inquiry. If a researcher is interested in how the
placement of a student in a tracking system correlates to social class or race, then a survey may be the best method. However, if a researcher wishes to understand what it is like for a student to be in the classroom, what that experience is, then interviewing is the best avenue of inquiry.

I wanted to understand faculty views on the integration of QI concepts into the nursing curriculum. I was interested in their experiences with the topic. Thus, I used semistructured in-depth interviewing for the primary source of data collection because it allowed me to obtain the perspectives of the participants, appreciate their lived experience, and make meaning of that experience (Seidman, 2012).

Approval to conduct the study was obtained from the Institutional Review Board (IRB) at Northern Illinois University. After getting a signed informed consent as required by the IRB (Appendix B), I interviewed fourteen full-time ADN faculty. Twelve of the 14 participants were interviewed face-to-face in a setting appropriate and convenient for the interviewee and two participants were interviewed via the telephone. One telephone interview happened due to scheduling conflicts. However, the other phone interview occurred at the participant’s request. Interviews ranged from 40-100 minutes in length. All the interviews were conducted through open-ended questioning using a semistructured format (Appendix C). Conversations were recorded using a digital recording device and immediately after each interview, I transferred the digital recording to a password protected OneDrive cloud storage. Pseudonyms were assigned to each of the participants and the interviews were professionally transcribed using an independent transcription service. Finally, I compared the transcripts to the audio recording to ensure congruence and accuracy.

I erased the files from both digital recorders after transcription of all the interviews was completed. All physical reports, including hard copies of the transcriptions, are locked in a file
cabinet in the researcher’s home and work offices. Destruction of the digital recording of the interviews, the transcriptions, and all physical reports will occur three years after the dissertation defense.

Face-to-Face vs. Telephone Interviews

Traditionally, the telephone mode for qualitative interviewing has been discouraged (Irvine, 2011; Novick, 2008). However, research findings are scarce that indicate differences in the process and outcomes of qualitative telephone interviews versus face-to-face interviews (Irvine, 2018). Novick (2008) mentioned that the bias against telephone interviews exists primarily because many believe the absence of visual cues results in a loss of “contextual and nonverbal data” which may compromise the “rapport, probing, and interpretation of responses” (p. 391). She completed a literature review for articles on telephone interviews for data collection in qualitative research. Based on her research, she found little evidence that data loss or distortion occurs when data are collected by telephone interview. Further, she concluded that interpretation or quality of findings is not compromised. In fact, she found that a benefit to telephone interviews is that they may allow respondents to disclose sensitive information more freely.

Irvine (2011) looked at the difference between face to face and telephone interviews from two areas: dominance (who spoke more) and duration (how long the interview lasted). As such, the author focused on the interactional perspective of the data, rather than analyzing the substantive content of interviews. She found that the duration of the telephone interviews were on average 15 minutes shorter and this was a result of the participant saying less, rather than a proportional reduction in talk from both parties. These “missing data” may be concerning to
some but Irvine declined to offer a concluding comment about whether telephone interviews can be deemed ‘suitable’ for qualitative research because she did not study if there was a difference in substantive content between face to face and telephone interviews. She suggested that further research is needed in this area.

Drabble et al. (2016) conducted a study to determine if telephone interviews are a valuable and valid method for collecting rich narrative data with women from marginalized populations, including data related to sensitive subjects. Although there was variability in interview length, they found that interviewees were generally willing to engage in lengthy interviews over the telephone and that these interviews yielded rich data. Interviewees offered rich descriptions of their life experiences, including experiences related to sensitive topics, such as alcohol or other drug use, sexual identity, and traumatic experiences.

Research has shown that telephone interviews compared to face to face interviews may vary in length (Irvine, 2011); however, findings have not indicated a difference in the quality of the data that were collected via telephone interviews (Drabble et al., 2016; Novick, 2008). According to Seidman (2012), it is better to conduct a telephone interview than to not interview at all, despite concerns voiced by some researchers regarding telephone interviews. I agree with Seidman and am comfortable that the data I obtained from the two telephone interviews were rich and valuable to my study.

Documents

Documents are “a ready-made source of data easily accessible to the imaginative and resourceful investigator” (Merriam, 2009, p.139). Documents are helpful in qualitative research because they provide information about the context of the situation and provide supplementary
research data (Creswell, 2014; Bowen 2009). Also, documents are manageable and practical, accessible and reliable, cost efficient and time efficient, unchanged by the researcher’s influence or research process, and may contain data that can no longer be observed (Bowen, 2009).

According to Bowen (2009), document analysis is a way to ensure that research is critical and comprehensive. Qualitative researchers usually use at least two different data sources and methods to triangulate the data. The purpose of triangulation is to provide a convergence of evidence that breeds credibility. Verifying findings across data sets can reduce the impact of potential bias by examining information collected through different methods (Bowen, 2009).

Concerns about using documents are that they require investigative skills to locate pertinent documents and even with thorough investigation some documents may only provide a small amount of useful data or sometimes none. Additionally, documents may be incomplete, or their data may be inaccurate or inconsistent. Likewise, there may be gaps or sparseness of documents, leading to more searching or dependence on additional documents (Bowen, 2009).

Public documents are easily accessible and include student transcripts, mission statements, annual reports, policy manuals, student handbooks, strategic plans, and syllabi. For this research study I chose to analyze college catalogs and nursing handbooks to determine if QI was mentioned in either the student learning outcomes and/or course descriptions. I was able to locate some of the college catalogues and nursing handbooks on the institutions’ websites. For the institutions where I was not able to locate the college catalogue or nursing handbook, I contacted the research participant and requested the information. Of the eleven colleges that were included in my study, I was able to obtain the information for all but one.
Data Analysis

Data analysis in qualitative research is the process of making sense of the data. This process involves consolidating, reducing, and interpreting the participants’ statements. Data analysis is a complex process in which the researcher moves between concrete bits of data and abstract concepts with the goal of establishing categories or themes. Data analysis involves inductive and comparative reasoning (Merriam, 2009). In my study I used coding to derive themes from interviews and I used documents analysis to support these themes.

Coding

During the coding process, I used analytical memos to create a reflective journal. Analytical memo writing affords a researcher the opportunity to reflect on “your coding processes and code choices; how the process of inquiry is taking shape; and the emergent patterns, categories and subcategories, themes, and concepts in your data” (Saldana, 2012, p.41). There is an ongoing interrelationship between writing the memo and reorganization of the categories (Saldana, 2012, p.52). These informal memos help the researcher think through the coding process, process thoughts, and think critically about the data. The researcher can ask and answer questions, make connections, build strategies, and rise above the data to higher level problem-solving (Saldana, 2012). Ultimately, this approach leads to a more profound reflection on the complex meaning of the data.

I wrote a journal entry for each interview as I coded it and reflected on relevant observations: “I am impressed with how flexible nurse faculty must be. They do not always teach material they have experience with” (reflective journal, 8/5/17). “I find it so interesting that the
faculty wanted to know if they were answering correctly” (reflective journal, 9/23/17). I also used the journal to help begin formulating ideas: “It seems as if accreditation and NCLEX are the forces at work in dictating change. Maybe this is a negative outcome as opposed to a positive one” (reflective journal, 8/3/17). “Again, the educators seemed to lump QI in with EBP” (reflective journal, 10/27/17). Finally, I used the journal to record the most impactful quotes from participants. Overall, the reflective journal helped me formulate ideas about the interrelatedness of codes and the categories that emerged.

NVivo11, a qualitative data analysis software that provides users with tools to store, organize, and analyze unstructured data, was used to assist with data management and analysis. I imported all the transcribed interviews into NVivo11 and began data analysis with initial coding. Initial coding is a first cycle coding method which uses an inductive approach that permits categories to emerge from the data and provides the researcher “with analytic leads for further exploration” (Saldana, 2012, p.101). I used initial coding to carefully examine the data by breaking them into discrete parts or nodes (referred to from here on as codes), and identify similarities and differences within the data. According to Merriam (2009), assigning codes is a way to begin to construct categories. I created the initial codes by highlighting data that addressed my research questions and piqued my interest. At the end of the first cycle coding I had 112 codes. The most common code, change, had 15 sources and 64 references while the least common codes, of which there were 14, had only one source and one reference.

After identifying these initial codes, I used Second Cycle coding to “develop a sense of categorical, conceptual, and/or theoretical organization” (Saldana, 2012, p.207). In this second cycle coding I used a comparative approach to identify similar categories. Categories are not data themselves but are an abstract derived from the data (Merriam, 2009). I identified six categories
that addressed most of the codes: Barriers, change, curriculum, external factors, internal factors, and quality improvement. However, these categories were short and impersonal descriptions of the data and did not capture the ADN faculty member’s perspective or thoughts about the study. Therefore, I completed another round of coding and identified themes that emerged from the grouping of these categories. I identified three themes with supporting subthemes. These themes and sub themes conveyed the participants’ meaning.

**Document Analysis**

Document analysis involves documents being interpreted by the researcher to give voice and meaning around a topic. Document analysis is an important research tool and is an invaluable part of most methods of triangulation (Bowen, 2009). Although documents can be a rich source of data, researchers should look at documents with a critical eye and determine the relevance of documents to the research problem and purpose. The best way to address document analysis is with a clear process planned (Bowen, 2009).

O’Leary (2014) presents two techniques for analyzing documents, interview and content analysis. With the interview technique, the researcher treats the document like a participant or informant and the researcher “asks” questions and then highlights the answer within the text. The content analysis technique involves noting occurrences, where the researcher quantifies the use of particular words, phrases, and concepts (O’Leary, 2014). The information is then organized into what is “related to central questions of the research” (Bowen, 2009, p. 32).

I used content analysis for this document research. I analyzed college catalogues and nursing student handbooks to find the Student Learning Outcomes (SLOs) for each of the ADN programs in this study. I then reviewed the SLOs and course descriptions for mention of QI. I
found that of the ten ADN programs that I obtained documents from, five out of ten or 50% listed QI in their SL’s. Next, I reviewed the nursing course descriptions for mention of QI. I found that three or 30% listed QI in course descriptions (Table 4).

Table 4
Course Evaluations for QI in SLO and Nursing Courses for 2016-2017

<table>
<thead>
<tr>
<th>Institution</th>
<th>QI in SLO</th>
<th>If yes, list here</th>
<th>QI in Nursing Courses</th>
<th>If yes, list here</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NO</td>
<td></td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Unable to obtain</td>
<td></td>
<td>Unable to obtain</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>NO</td>
<td></td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>YES</td>
<td>Evaluate information to manage the systems and outcomes of care for the promotion of quality improvement and patient safety.</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>NO</td>
<td></td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>YES</td>
<td>Evaluate quality improvement processes to improve the quality and safety of nursing care and patient care outcomes.</td>
<td>YES</td>
<td>QI as related to QSEN competencies is mentioned in most courses</td>
</tr>
<tr>
<td>7</td>
<td>YES</td>
<td>Utilize data to monitor outcomes of care processes and implements improvement methods to design and test changes to continuously improve the quality and safety of healthcare.</td>
<td>YES</td>
<td>An introduction to community, public services, health care systems, health care financing and quality initiatives also will be included.</td>
</tr>
<tr>
<td>8</td>
<td>NO</td>
<td></td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>NO</td>
<td></td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>YES</td>
<td>Implement fiscally responsible quality and regulatory measures to improve patient care.</td>
<td>YES</td>
<td>Professional standards, quality measures, legal and ethical considerations within the nursing profession are detailed.</td>
</tr>
<tr>
<td>11</td>
<td>YES</td>
<td>Continually question current nursing practices in the quest for continual quality improvement to enhance positive patient outcomes.</td>
<td>NO</td>
<td></td>
</tr>
</tbody>
</table>
Trustworthiness of Data

Since “human beings are the primary instrument of data collection and analysis in qualitative research, interpretations of reality are accessed directly through their observations and interviews” (Merriam, 2009, p. 214). A data collection instrument is not between the researcher and the participants, thus enhancing internal validity (Merriam, 2009), but also creating a closeness that increases the potential for bias. Therefore, trustworthiness of the data should be established within qualitative studies.

Among the strategies for improving research trustworthiness that are suggested in the literature, the guidelines of Lincoln and Guba (1985) are often applied. In their book, they propose four trustworthiness criteria: credibility, transferability, dependability, and confirmability and they provide techniques for addressing the criteria (Lincoln & Guba, 1985). One way to address trustworthiness is through triangulation of the data (Creswell, 2014; Loh, 2013; Merriam, 2009). Triangulation involves “using multiple investigators, sources of data, or data collection methods to confirm emerging findings” (Merriam, 2009, p. 215). In this study source triangulation occurred through the comparison of interviews from different participants. Method triangulation occurred by using participant interviews as well as document analysis as two methods of data collection.

Researcher Role

Qualitative research necessitates the researcher to understand her positionality with the participants because this positionality will influence the interactions she has with them. However, when reading about insider versus outsider status, the category in which I fit was not
clear to me. I had many characteristics, experiences, and expertise in common with the participants. However, I did not know the participants before I interviewed them. I thought I had met the criteria for both insider and outsider status.

According to Mercer (2007), “the more we conceive of insiderness and outsiderness as an ‘either/or’ duality, the more we are tempted to judge one as better than the other” (p.7). While insider status may help to make the participant more comfortable during the interview, belonging to the investigated group can result in biases, predispositions, and attitudes that affect the interview and data produced. Merriam (2009) asserted there are no right answers about insider status, only positive and negative consequences of any combination of interviewer and participant. A solution to this dilemma is to consider insiderness and outsiderness as points on a continuum, recognizing the potential strengths and weakness of each, in all manner of contexts (Mercer, 2007). Accordingly, I will describe my insider-outsider status based on a continuum with many dimensions.

At the time of the interviews, I had worked as a full-time ADN faculty for nine years, been a registered nurse for 25 years, and been a Certified Nurse Educator (CNE) for four years. Further, I participated in the implementation of a new curriculum and the nursing accreditation process including a follow-up report. I was the chairman of a nursing committee tasked with collecting and analyzing nursing program outcome data. Because of my experiences, I had a collective understanding of nursing education and community college students with the participants including a shared vocabulary; knowledge of nurse faculty job requirements; comprehension of the nursing program accreditation standards, curriculum, and state requirements; understanding of the student population; and an appreciation of the challenges ADN faculty encounter (Blythe et al., 2013). These similarities made me feel like an insider.
The benefits to having an insider status include an understanding of the nursing education culture and an intimacy with the participants, both of which promote truth-telling, open dialogue, and a greater depth of data obtained (Blythe et al., 2013; Unluer, 2012). I believe having this insider knowledge helped participants feel more comfortable speaking with me than to a person without these shared characteristics. Consider the following interaction:

Amanda: We’re based on the QSEN competencies
Me: Okay
Amanda: There’s seven QSEN competencies. I can print them if you’re not familiar with them.
Me: No, I am.
Amanda: Okay, good. I won’t even go through them all with you.
Nancy: We’re overwhelmed and still trying to add on to our content. You know how that goes.

However, a disadvantage of having an insider status is a loss of objectivity, an assumed understanding, and a bias that comes with familiarity (Blythe et al., 2013; Unluer, 2012). In the above example, I did not allow Amanda to explain to me what she knew about the QSEN competencies of which there are six (QSEN, n.d.). In my interaction with Nancy, I know what it is like to be overloaded with content and so I did not ask her to expand upon her feelings. In my assumed understanding, I failed to obtain additional detail during the conversation which could preclude effectual in-depth analysis of the data.

Fortunately, journaling is an accepted strategy to address and overcome the disadvantages of insider status as it is an effective means of personal reflection to identify the researcher’s subjectivities about the study. This reflection is a crucial component of qualitative research (Blythe et al., 2013; Watt, 2007). I maintained a journal throughout the study which allowed me to reflect on my experiences and preconceptions that could bias my data collection and analysis. The journal helped me to address concerns about insider status and the effect this
may have on my research, specifically personal assumptions and biases. One area of concern that I noted in my journal was that I often agreed with what my participants said. For example, in my journal entry following my interview with Cindy I wrote: “I really connected with what Cindy had to say and agreed with many of her comments. Is it okay to tell the participant during the interview that you agree with them”? Another area of concern is that I compared my community college to that of the participants. For example, after speaking with Molly I wrote:

The health science building was built 1.5 years ago and so everything there was modern and beautiful. This was not the first time I thought “we are really behind at my community college” I mean most of the colleges I visited have much better accommodations than us.

Having a shared knowledge base with the participants made me feel like an insider. However, in choosing participants for this study I purposely avoided faculty whom I knew or with who I had worked. I was not privy to the organizational culture, vision, and mission at the community colleges where my participants worked, and this distancing made me feel like an outsider. The advantage of this outsider status is that I was more objective and made fewer assumptions about the faculty member, the institution, the curriculum, and the students. Also, I asked more clarifying questions because I was not familiar with the nursing program or the participants. The disadvantage to having outsider status is that the participants may not have been as trusting of me and our interaction may not have been as natural as if we had a more intimate relationship. I believe I was able to overcome issues of trust by building rapport with the participants. I was friendly with the participants and shared some of my experiences but maintained a respectful and professional persona (Seidman, 2012).

In this chapter I presented the research methods, design, and tools I used in this study. A qualitative methodology and a phenomenological design gave voice to the opinions and attitudes
of the ADN faculty. Through purposive sampling I found 13 full-time ADN faculty who shared their perspectives in semistructured in-depth interviews. I also reviewed documents to determine how many ADN programs included QI in their SLO’s and/or course descriptions.

Content analysis on the documents I obtained revealed that 50% of the documents listed QI in their SLO’s and 30% listed QI in course descriptions. The in-depth interviews were analyzed using initial coding and second-cycle coding. The three themes that I identified were: ADN faculty believe quality improvement is an important topic but there are barriers to integrating QI into curriculum, ADN faculty are frustrated with curriculum change, and ADN faculty need resources and support to keep up with change and to implement innovative teaching strategies. These themes will be presented in the next chapter.
CHAPTER FOUR
FINDINGS

The purpose of this research study was to explore Associate Degree Nursing (ADN) faculty perspectives regarding the integration of QI concepts into nursing curriculum. The research questions addressed in this study were:

1. What are ADN faculty views on the integration of QI concepts into nursing curriculum?
2. What do participants identify as barriers to the integration of QI concepts into nursing curriculum?
3. What have participants come to believe about innovative teaching methods, curriculum design, and teaching QI?

As discussed in Chapter 3, I identified three major themes with supporting subthemes in this research. In this chapter I will explain these themes and their associated subthemes and provide evidence to support why these themes were chosen. The three themes I identified were: ADN faculty believe quality improvement is an important topic but there are barriers to integrating QI into curriculum, ADN faculty are frustrated with curriculum change, and ADN faculty need resources and support to keep up with change and implement innovative teaching strategies. Appendix D provides a synopsis of all the themes and subthemes that will be presented.
ADN Faculty Believe Quality Improvement is an Important Topic, But There Are Barriers to Integrating QI into Curriculum

The first theme identified in this research study was that ADN faculty believe QI is an important topic but barriers hinder integrating QI into curricula. The inclusion of QI in nursing education has been made a priority by stakeholders. However, in this research study I wanted to ascertain the participants’ beliefs about the importance of incorporating QI into nursing curriculum.

The majority of faculty I interviewed stressed that incorporating QI content into their curriculum was important and nurses are expected to know about QI in clinical practice. When I asked Molly she said, “Yeah. It needs to be included.” Jessie agreed, “Yeah, I think it should be included, definitely.” Liz concurred, “I do. I think it's very important.” Lauren believed it needs to be included “Because it's the reality of where they're going- That's the workforce they're going to join.” Cindy had the same opinion, “I think it's a standard in nursing and medicine. It's not going away so either we teach them and they're active participants or ... They're going to flounder.” Sheila noted, “Yeah, I agree. I think it's so important. It is just so important with safety, that I can't imagine not teaching it. If you don't address quality, then you're not addressing safety.”

The ADN faculty I interviewed overwhelmingly supported incorporating QI into ADN curriculum but expressed concerns about doing so. Further, they identified several barriers to incorporating QI into ADN curriculum, including: QI is a complex topic, few ADN faculty have advanced training or experience in QI, and faculty are confused about the differences between QI and EBP. These subthemes will be discussed in the following sections.
Quality Improvement is a Complex Topic

One subtheme, “QI is a complex topic” recognizes a barrier that ADN faculty expressed about integrating QI into their curriculum. This barrier is that QI may be too complex a topic to cover in the limited number of hours ADN programs are allotted. As Amanda noted, “I don’t think it’s like a black or a white concept… I think it’s probably difficult to pinpoint exactly how to teach it… It's not just a topic you can throw a slide up on.” Carly mentioned “I’m not sure at this level quality improvement… Because right now at this level we are just looking for quality, we’re just looking for you know the content because the content it’s so important.” Cindy believed that incorporating EBP into ADN curriculum is valuable but mentioned that “when you truly look at quality initiatives, I mean those are big concepts. To develop, identify a problem, research it, and develop an approach to solving it or improving it, that feels a little much to me.”

Yet, the requirement for BSN programs is that students should be involved with a QI project that spans several courses and engages the students in quality improvement/patient safety activities to promote an understanding of the organizational process, unit application, and evaluation process. Further, students should participate in quality improvement activities and/or required regulatory reporting systems. Finally, they should also participate in an actual root cause analysis (RCA) and/or failure mode effects analysis (FMEA). In summary, BSN students are expected to be actively involved in QI projects, not just observers (American Association of Colleges of Nursing, AACN, 2008).

Many of the participants in this study did not believe the ADN curriculum should cover QI at the same level as the BSN curriculum. In fact, many of the faculty I interviewed believed that ADN programs should only introduce students to QI concepts. Lauren stated, “I feel, we
have a responsibility to at least expose them to it and then they'll continue to learn when they join the hospital force.” Chris agreed, “incorporating it a little bit earlier, like in the ADN programs and the smaller programs. It would be nice so that they know it’s there. It exists.”

Kelsey stated:

I think that it should be introduced in the ADN program because I think that nurses need to know about it, even though I don't do it, and I should. I think it's important that we at least introduce that to them… I think it's important that ADN nurses know it and I think it's more appropriate for the BSNs to delve further into it, because I think those are the ones that are going to be working in those positions.

However, one participant believed that ADN students should be more actively engaged in QI processes. In fact, she shared with me a QI project she implemented that allowed students to participate in QI and not just read about it or observe it. Molly discussed how she incorporates QI into her simulations: “we run this thing in our lab called quality and safety in the lab. When they [students] make an error during a lab testing procedure, they fill out this mock incident report and then those are collected.” She went on to explain what they do during their leadership course:

[the students] do a report, a quality assurance improvement report, based on the behaviors… They're looking through these mock incident reports and trying to decide if they can find ... Usually the reason the people write that they made an error is they were nervous, or they didn't really watch the video, or do what they were supposed to. In that regard, the analysis is not always found. Every once in a while, there will be something like, "The gloves were sticking together. Every once in a while, you get some feedback more like, "Nobody told us to do it like that." Then you're like, "Okay, maybe we can give them feedback that they should examine how the skill is being taught." At least, even though the reasons are usually benign, because the students are mostly, "I was nervous." It does give them a chance to look back. The seniors do laugh because sometimes it's even from them, from the previous semester, they're like, "Oh my gosh, can't believe we were nervous about that." Anyway, that's a fun little way to do a quality improvement that's true.

While most of the participants I interviewed believed that QI should be incorporated into ADN curriculum, many felt it should be introduced at a basic level and not covered to the extent
that it is addressed in BSN programs. This finding may explain why 30% of the college
catalogues and nursing handbooks I reviewed mentioned QI in the nursing course descriptions.
Considering the educational disparities between ADN graduates and BSN graduates in terms of
quality and safety preparedness (Djucik et al., 2019), I would argue that ADN faculty should do
more than introduce students to QI. Efforts are needed to educate ADN faculty about QI projects
that can be incorporated into ADN curriculum. Unfortunately, these efforts are hindered because
the faculty do not have extensive knowledge of QI.

Few ADN Faculty Have Advanced Training or
Experience in Quality Improvement

Another subtheme, few ADN faculty have advanced training or experience in QI,
recognized an additional barrier that ADN faculty expressed about integrating QI into their
curriculum. This barrier is that each faculty member has a unique and diverse background with
fluctuating years of nursing experience, teaching experience, and clinical expertise. The
participants in this study demonstrate this diversity among faculty. The years of nursing
experience for the participants ranged from 10 years to over 30 years, teaching experience
ranged from less than a year to 30 years, and clinical expertise ranged from hospital-based
clinical practice in maternity, medical-surgical nursing, mental health, emergency department
pediatrics, critical care, invasive cardiology, and oncology to non-hospital-based nursing in
schools, public health, sales, and regulation.

Although it is impossible for one nurse faculty to stay abreast of all the changes occurring
in healthcare, or to be an expert in every area of nursing, expertise plays a role in the comfort
levels of faculty members in teaching a specific topic such as QI. And a lack of QI experience
can lead to challenges with integration of this subject into curriculum. In fact, several participants list this lack of recent experience with or previous expertise in QI as a barrier to QI integration. Emma mentioned that faculty would be more aware of QI within nursing if they were exposed to it. “Honestly, when you look at quality improvement projects, if all of us had the wherewithal to be in a position where we were exposed to it, it would constantly be on our mind.” Lauren agreed that experience is important. “Some teachers may not even understand or know how to apply it because some people have been removed from the healthcare system for a very long time.” However, keeping current with clinical practices takes a great deal of time and effort and many faculty are unable to devote the necessary time and effort. Jessie admitted, “I don't work in a hospital anywhere else. Once I started full-time here, I had three young kids and now they're grown but one full-time job was enough.”

Lack of training or experience in QI principles, combined with the complexity of the topic causes confusion between evidence-based practice (EBP) and QI. This confusion makes it difficult for ADN faculty to integrate QI into the curriculum.

Confusion Between Evidence-Based Practice and Quality Improvement

The last subtheme, confusion between evidence-based practice and quality improvement, recognized the last barrier that ADN faculty expressed about integrating QI into their curricula. This barrier is based on confusion that pertains to QI and EBP. Nursing is an occupation grounded in tradition. If you question a nurse as to why he or she is carrying out a skill a specific way or ask why tasks are done within a precise time-frame, the nurse will likely not be able to recite the evidence or research to support the practice. In fact, the answer commonly given is “that is how it has always been done.” However, as nursing advances from an occupation
grounded in tradition to an evidence-based profession, concerns are being raised about the apparent disconnect between best practice and actual practice; a concern referred to as the research-practice gap (Leach & Tucker, 2018) or theory-practice gap.

Nurse educators have the unique opportunity to bridge this gap by teaching future nurses the best practice based on evidence. Thus, nursing curriculum is regularly revised to reflect current practice. According to Conner (2014), many nurses may be unaware of the importance of their contributions to developing new knowledge, innovations, and improvements and may not be able to differentiate among research, evidence-based practice (EBP), and QI. During my research, I recognized that many participants struggled to differentiate between EBP and QI. When asked what QI is, Liz replied:

For me quality improvement is looking at a situation with a patient's condition where I would like for the patient to receive the best possible care according to the best practices. It's something that's evidence-based. It's something that's research based.

Molly mentioned, “It's hard for me to think about quality improvement without talking about evidence-based practice.” Nancy added:

I don't know the only thing I can think of with quality improvement is to stress the evidence-based practice. You go by based on what's identified as areas for improvement and then working towards those based on collaborative work with the patients, the people, the facility, the resources that the facility has.

Amanda expressed some doubt about what constitutes QI. “I always refer to scrub the hub. I think that was probably a quality improvement. I think washing your hands was a quality improvement.”

Other faculty mentioned that they teach EBP but not QI. Jessie said,

When I talk about different things I talk about somewhat the progression of how certain treatments have evolved. Like Rotavirus we used to say, "Okay you have to rest the bowel, don't feed them." Then through research, through evidence-based research we discovered no that's the wrong thing to do. You should really be feeding them to get it out
of their system and so now we feed them. There's changes in care and things like that based on research and some things are just done because they've always done it that way. We need to do research to determine what's really best. I give examples like that but I don't really teach quality improvement per say.

Kelsey reflected that her ADN program does not cover QI like it was covered in the BSN program where she taught, “Yeah, no. I think we say evidence-based practice, but we never put QI in the picture like what they do.”

Admittedly, differentiating between research, EBP, and QI is difficult because each of these topics is dependent upon the other. The purpose of research is to generate new knowledge and add to existing evidence using a systematic approach to investigate, explore, and discover a phenomenon (Conner, 2014; Fitzpatrick, 2016). Unlike research, EBP is not about developing new knowledge or validating existing knowledge; rather, it is about translating the evidence and applying it to clinical decision-making. The purpose of EBP is to use the best available research to make patient-care decisions and change clinical practice. Through EBP the clinician applies the best evidence available to care that is delivered (Baker, 2014; Conner, 2014; Fitzpatrick, 2016). QI on the other hand uses systematic, data-guided approaches such as PDSA cycles, Six Sigma, and Lean methodologies to improve processes or outcomes. QI uses data to monitor the outcomes of care processes and uses improvement methods to design and test changes to continuously improve the quality and safety of health systems. QI can be utilized to monitor and evaluate the quality and appropriateness of care based on EBP, but it can also be used to improve processes (Baker, 2014; Conner, 2014; Fitzpatrick, 2016).

However, QI involves more than implementing and evaluating EBP; QI is about using a systematic approach to gather data which can be used to improve processes and ultimately outcomes. EBP may be a part of QI but QI can occur without research and EBP. As Conner
(2014) mentioned, QI does not require extensive literature reviews and rigorous critical appraisal as does research and EBP. Therefore, QI can be used to address site or unit specific problems involving many nurses. The results of QI projects are meant to improve processes and outcomes for a specific unit or site and are not meant to provide generalized knowledge or best evidence. Because of this differentiation, many nurses can be involved in QI projects.

Through my research it became clear that some faculty understood the difference between EBP and QI projects and were able to create assignments that allowed students to see QI in action. However, the most common QI projects seemed to occur during students’ clinical experiences. Barb had students look at the QI projects that are happening in the clinical setting:

When you mentioned quality improvement in the realm of nursing, I think about quality improvement projects that units are doing. I think about JCAHO Standards, those types of things. I know that as a program we try to incorporate that concept of quality improvement in each course in the clinical setting by asking students to identify what quality improvement projects each unit that they're going to is working on and what they as students can do to better understand and participate in those projects.

Nancy had students look at quality measures:

They may see the patient satisfaction. Those will be the only things we usually see on the unit. They usually have unit meetings for that to discuss some of those things. They can see the surveys of, "Oh hey we only scored 10%," or now it's flu season. Now they look at the flu thing and only 50% of the patients that qualified received the shots and were even acknowledged as, we'd never been that low, but let's say. Okay, so now the charge nurse that was in charge of auditing every patient on the floor, did they qualify for the flu vaccine? Was it addressed? Then she hunts the nurse down or leaves a nasty gram and says, "Why was this not addressed?" Or it needs to be done, "Hey Nancy, can your students do this?"

Both Barb and Nancy had students passively observing QI projects that took place on their clinical nursing units. Although this strategy introduces QI to students and helps them to understand QI, it does not actively engage students in QI processes.
On the other hand, two other participants shared how they actively involved students in quality improvement processes on their clinical nursing units. Sheila has had students who were part of the QI project:

Another quality initiative was, I had 2 students in the ICU and they were testing out different hand pumps. They were wearing something that could tell when they went in and out of a room that could tell when they squeezed and washed their hands with the gel. There was a monitor up on the wall ... You were randomized to a number. So, if my number was 899, I could see 899 is washing their hands so much more than number 251. It was just so interesting. It was kind of like a thing that was going on in the unit just to monitor hand washing.

And at one of her clinical sites, Amanda used experts to assist with teaching QI. She described how a clinical site has:

allowed our senior students to spend a couple of days with their QI coordinator or whatever. She's going to actually have them going through numbers and going through surveys and actually doing stuff. We were like even if it's just a one-day rotation where they're just doing, you know, going through files or something, I still think it will be so valuable to show them what QI is. Rather than answering the stupid question on the care plan. We definitely need to incorporate more QI into our practice.

In this first theme, I presented evidence to show that most study participants believed it was important for QI to be, at a minimum, introduced in the ADN curriculum. However, the participants also discussed barriers to integrating QI into the ADN curriculum. Quality improvement is a complex topic that is understood by most ADN faculty; however, many faculty members lack experience or expertise in organizing QI projects or processes. It also became apparent to me that many of the participants were unclear about the differences between QI and EBP. These barriers could explain ADN faculty’s hesitation to engage students in the QI projects and processes.
ADN Faculty are Frustrated with Continual Curriculum Change

The second theme identified in this research study was that ADN faculty are frustrated with continual curriculum change. Healthcare changes rapidly, and such change necessitates frequent nursing curriculum revisions and updates. These intentions are to ensure nursing education reflects recent practice and adequately prepares new graduates to function within a complex healthcare system. However, academia is not a field known for rapid changes and curriculum change is time consuming. Forbes and Hickey (2009) listed several factors for slow moving curriculum change including faculty resistance, difficulty reaching consensus about what constitutes essential curriculum content, inadequate focus on the process of student learning outcomes, and limited numbers of faculty with expertise in education. When asked how curriculum change occurs in her nursing program Lauren replied “Of course, I'm sure you know, it takes a very long time to even change the curriculum and then to formally implement it.” Sheila joked about the slow process of curriculum change, “I read once in an article that changing nursing curriculums, is like moving a graveyard.” The problem with slow curriculum change in nursing education is that by the time the change in implemented it may be outdated. Molly summed up this dilemma:

we believe we've rewritten the curriculum in general; we're getting down to course specific, not just the overseeing, generic objectives, but the unit. Hopefully we'll be done in a year and then it'll take 6 to 8 months to get approved, because it has to get approved by the state, ACEN, and the college. The college, the state, and ACEN. Maybe in 2 and a half years it'll start, so that's a 5-year process. Hopefully it's still relevant.

This concern is a decades old problem. Appeals for innovation started in the beginning of the twenty-first century (NLN, 2003) but the educational methods used to prepare undergraduate nurses has remained relatively unchanged (Benner, 2012). In fields of study that are not
developing as rapidly as healthcare, this time lag may not present a problem. However, in fields that change quickly (such as nursing), flexible, innovative, and up-to-date curricula are necessary.

During the coding process, I discovered that ADN faculty were clearly frustrated by the constant curriculum changes needed to provide the best learning experience for nursing students. The major frustrations were continual curriculum revision due to changes, resistance to change, and never enough time.

**Continual Curriculum Revision Due to Changes in Practice**

One subtheme that recognized a frustration expressed by ADN faculty is the need for continual curriculum revision due to constant changes in nursing practice. It is said that the only constant is change. This statement is very appropriate for the field of healthcare due to the rapid changes that occur. Nursing practice changes have been driven by several factors including healthcare reform, especially the Affordable Care Act; more complex patients due to an increase in chronic health conditions and an aging population; technological advances; a push for safety and quality through outcomes; and a focus on cost containment (Salmond & Echevarria, 2017). Nurse faculty are feeling the effects of this rapid change in nursing practice. Liz expressed such a feeling, “Change is really constant. I know you know that. I'm just saying that change seems to be so much more rapid now a days.” Cindy shared her frustration with keeping up with the rapid changes in nursing practice:

I feel like clinical changes so rapidly, although it takes years to get research involved, but I mean all of a sudden, something shows up and you're like, "This is what we're doing today," and you're like, "Okay." It changes, whether it's fall precautions, a new med, there's always something popping up.
As nursing practice changes, knowledge and information will also become outdated. In fact, Russell et al. (2007) have indicated that some of the knowledge taught in a nursing program is already outdated before nursing students graduate. Thus, continuous revision of the curriculum and the content it covers is essential (Waterson et al., 2006). According to Dalley et al. (2008), individual courses should be continually reviewed based on both formal and informal assessment data. They stated further that the full curriculum needs a comprehensive review every one to two years.

If nurse educators do not update curriculum to reflect current nursing practice, the existing theory-practice gap (TPG) is bound to increase. A theory practice gap occurs when the information that students learn in nursing school does not match what they are seeing in the clinical setting. A TPG will result in new nurses who are not adequately prepared for transition to practice (Huston et al., 2018). Sheila described how she helps transition students, “I'm maybe doing something similar in my own practice as a teacher, shifting the role transition concept to the first semester so that I'm preparing them for the transition to practice before they're even starting to practice.”

Thus, nursing education requires continuous curriculum change to remain current with nursing practice. Chris discussed the effect of curriculum change:

Once you design and manipulate this information to where you think it works best for the students, for you, and ... "No. You have to change that. Get rid of all this. Don't even do that. Push this in here somewhere." Something is going to be changed, altered ... Several things more than likely. Holy cow. Last year was insane around here. I don't know. Just with everything. Everything changed so drastically with the new curriculum and everything else too.

I found that nurse educators understand the importance of change to ensure that student nurses are prepared for practice. Chris mentioned: “Things get changed. It's a constant re-
evaluation of everything, really. I'm looking at it to see if it's the best practice for whatever is going on.” Amanda concurred: “We just got our curriculum back up to the last changes, but I mean I guess that's life. We got to keep the program ever changing.” Sara reflected on the long-term effect of not changing: “Everybody knows the amount of work that's involved, but we know we also have to be updated and keep going. Otherwise, you won't have a school.”

However, the greatest challenge for nurse faculty comes not only from the need to change, but also from knowing what to change. As nursing practice changes occur, more content is introduced into the curriculum resulting in content overload. Nurses must have an extensive knowledge base, excellent communication skills, and conflict management savvy to practice. Likewise, with the rapid changes in nursing practice, nurses must embrace evidence-based practice. Consequently, nursing students must learn an extensive amount of content in school and that content changes quickly. During my research, I realized that as practice changes, nurse faculty feel the need to integrate new topics into nursing curriculum. Molly explained this well, “It's what I call the pile on content, not the core content, but that all the extra we thought we had to add.” Sheila mentions, “Cutting down content's great but then I'm going to make a hole and want to fill it with something else.”

Examples of newer topics that may need to be included in nursing curriculum are: dementia care; critical thinking; cultural diversity; intellectual disability; substance use; quality; safety; Lesbian, Gay, Bisexual, and Transgender Education; bioterrorism; service learning; emergency preparedness; and advanced directives. Although this list is not exhaustive, it demonstrates that a great deal of content that may need to be addressed in undergraduate nursing curriculum and many faculty believe that students will not learn content if it is not covered. As Nancy stated: “Reduce content? My own fear of if I don't, if I don't tell them they're not going to
know.” Sara worried that she is not giving the students sufficient content: “you know, these two-year programs, the community programs are really very accelerated. Sometimes you think, ‘have we given them enough content?’ Well, probably not.” Thus, faculty feel personally responsible to cover all the content (Forbes & Hickey, 2009; Gibbens & Brady, 2007). Molly explained this feeling well, “You're a nurse for a long time and you think you have to teach everything you know.”

Content overload, or as some authors have referred to it, curriculum overload, occurs when new content gets added to a curriculum without deleting outdated or less relevant content (Forbes & Hickey, 2009; Waterson et al., 2006). According to Giddens and Brady (2007), a shift from the industrial age to the information age, changes in health care delivery, teacher-centered pedagogy, content repetition, and the academic-practice gap have resulted in content overload. A study by Adewuyi et al. (2018) identified content overload as the most significant challenge to integrating dementia care content into prelicensure nursing curriculum. Dalley et al. (2008) also found that most nurse educators attending their presentations said they have too much to teach and too little time to teach it.

Many of the faculty I interviewed expressed frustration with content overload. Barb stated: “It's difficult because there's too much content in nursing.” Nancy concurred: We're overwhelmed and still trying to add on to our content.” When asked barriers to integrating QI into the curriculum, Sheila replied: “I think because there's so much content in nursing school, that would be a barrier.”

Some faculty believed that cutting content would be helpful. Sheila mentioned: “If we did reduce the content it would help us ... Help the students have a richer understanding of the core principals.” However, faculty face the challenge of determining what to cut. Chris
mentioned, “everybody's so full now. It's always, ‘Put more stuff in there. Put more stuff in there.’ What are we getting rid of?”

The challenge for nurse faculty comes in identifying what is necessary to include in undergraduate nursing curriculum and what is non-essential. In other words what is “nice to know” versus what is “need to know.” Elliott and Patterson (2017) found that faculty had difficulty prioritizing and balancing content that must be removed when new content needs to be added to curriculum. Cindy echoed this finding: “I feel like sometimes we add more and more and more to nursing education and the same number of credit hours. The problem is that what do you take out?” and Jessie says, “it's really so hard to cut down on content because you don't know what to cut down on.” Chris expressed a similar concern:

you take something that fits in the space that's 12 inches wide, and they say, "Quality Improvement needs to be taught." That's a full inch of information. You only have 12 inches and it's full, how do you ... Something is going to get squished. Something is going to be changed, altered ... Several things more than likely. How do you make that determination?

Jessie worried about the possible ramifications of cutting content:

Yeah. I have a really hard time with it. I think I'm too old or something. We're too old fashioned or ... I have a really hard time cutting down on the content. Especially I teach Kaplan and I see how much all this stuff is on the NCLEX.

The reluctance to cut content, and the responsibility faculty feel to cover all content, is often associated with anticipated success on NCLEX-RN (Forbes & Hickey, 2009). Given the high stakes associated with NCLEX-RN success, nurse educators feel enormous pressure to cover content (Tanner, 2004, 2007). Cindy believed that nurse faculty should not be responsible for determining what content to cut since they do not write the NCLEX questions.

What content do you remove, and if I'm removing it, is every school removing it? When it's NCLEX, I can't make a decision. I don't write NCLEX. I feel like that reduction has to come from somebody with a more global perspective on things. I don't feel like I'm
qualified to, like I said, if I've never seen it or heard of it, I'm okay letting it go, but if you're going to reduce more than that, I feel like that's a bigger discussion that should be had, versus leaving it up to individual faculty members.

And cutting content is not the only frustration that the participants expressed. When asked about cutting content many faculty members also mentioned a push to cut credit hours in their nursing programs.

Similar to content overload, credit inflation or credit creep occurs when faculty add more information to a program without taking anything away. According to a study conducted by the non-profit group Complete College America (Johnson et al., 2012), the number of credit hours required to complete an associate degree varies widely, much more so than for a baccalaureate degree. A baccalaureate degree requires 120 semester credit hours to graduate and 50% of the colleges surveyed by Johnson et al. (2012) required only the minimum of 120 hours. An associate degree is intended to represent the first half of a bachelor degree; thus, the associate degree should require 60 semester credit hours. However, few of the community colleges they surveyed required only the minimum of 60 semester credit hours for an associate degree (Johnson et al., 2012). Johnson et al., (2012) asserted that this discrepancy is caused by the lower level of standardization of associate degrees around the country, and it holds true for associate in applied science (AAS) degrees such as the ADN. Several of the faculty members I interviewed mentioned that their nursing programs were above the 60 semester credit hours. Chris stated, “We're at 64 for our program. They want us to reduce down.” And Amanda remarked:

What's on the topic currently is reducing our credit hours because we're at 72 and the state wants us to get to 64. They haven't mandated it yet, but they want all ADN programs, actually all programs BSN has to lower theirs to 120, but they want to lower all program credit hours, so we have to get to 64. They haven't given us a deadline yet, but what we've been told is if you do this proactively then they're not going to come after you and start looking through files and things like that. We're going to have it ready to go.
Because of credit inflation, attention is being given to the excessive amounts of time and credits required to complete an ADN (Benner, 2012). Thus, in addition to cutting content ADN faculty are being pressured to decrease the total number of semester credit hours. Lauren mentioned: "Okay, now that everyone seems to be cutting credit hours - The push is to cut down credit hours eventually in the state for an ADN program.” Chris stated the following about the credit hours for her nursing program, “I guess we have too many requirements in our curriculum now that they want us to take a class or 2 out of it.” When asked if Sara’s program has had to reduce content in her curriculum, she replied, “Yeah, we did have to. In fact, we're going through that right now. We've been told that we're going to have to reduce our credit hours.”

Despite searching for a policy that mandates 60 semester credit hours for Associate Degree programs in Illinois, I was unable to locate such legislation. However, some states such as Texas have established standards for academic Associate Degree Programs which mandate that ADN programs must be 60 semester credit hours. If the number of semester credit hours required to complete a proposed associate degree program exceeds 60, the institution must provide detailed written documentation describing the compelling academic reason(s) for exceeding the 60-credit hour limit (Texas Higher Education Coordinating Board, n.d.). I also learned that ACEN (the accrediting body for the ADN programs that were included in this study) is promoting a decrease in ADN program hours to near 60 semester credit hours (Tanner, 2013). As Barb said: “We had too many credit hours in our program for it to be an ADN program and to be able to be accredited by ACEN.” The role of ACEN and its repercussions on curriculum will be discussed in the next section.
Curriculum Revision Due to Changes in Licensure Exam and Accreditation

The subtheme, continual curriculum revision due to changes in the licensure exam test blue print and accreditation standards addresses yet another frustration expressed by ADN faculty. Nurse educators must monitor the changes to both the NCLEX test plan and ACEN accreditation standards to ensure that the curriculum is up to date and they must update the curriculum when changes occur. Failure to do so may result in negative consequences for a nursing program.

NCLEX pass rates are vital to the success of a nursing program for several reasons. First, potential students may look at a program’s NCLEX pass rate when considering which college to attend. Second, each state has a minimum pass rate that programs must meet to remain open. If these minimum pass rates are not met the state will put a program on warning and can even close a program. Finally, Accreditation Commission for Education in Nursing (ACEN) uses NCLEX pass rates as one measure for accreditation.

Nursing programs place a heavy emphasis on NCLEX-RN items in relation to the content of their curriculum because of the pressure they feel to prepare the students to pass the NCLEX. Adewuyi et al. (2018). Chris stated, “Yeah. That is what everybody looks at. It's the only thing they look at. Why would you look at anything else? That is our entry level. That is it. If you don't pass that, this whole program is worthless.” Amanda voiced a similar concern, “I get it. We're all busy, but if we don't do this then we're not going to have jobs because our NCLEX rates will be in the toilet and nobody will want to come here.” Lauren mentioned: “We use the exemplars here, so making sure we hit all the key points that are needed for NCLEX exam. That's the main
focus, it feels like from day to day.” According to Nancy, “The ultimate thing is the NCLEX, you know the pass rate. Unfortunately, that is a driving factor.”

To assist nurse faculty with NCLEX preparation, NCSBN provides a test blueprint that describes broad categories and sample topics that may be included on the NCLEX. However, this list is not exhaustive and with the rapid changes in nursing practice, much of this content quickly becomes outdated (Forbes & Hickey, 2009). For this reason, the NCSBN completes an update to the test plan every three years based on data from practice analysis surveys, expert opinion, and nurse practice act standards (NCSBN, 2016). The frustration that faculty experience is trying to keep up with the continual changes in the NCLEX test blueprint. Lauren wondered, “Is everything that we're covering appropriate to the NCLEX test plan? We try to keep up with it since things are constantly changing since the test plan has changed twice.”

In addition to addressing changes in the NCLEX, nurse educators feel pressure to maintain accreditation. Molly said, “When JCAHO comes or ACEN comes, we all scramble to show we're doing what we're doing.” Chris mentioned, “Between accreditation and everything else and NCLEX rates. Everybody wants it to do well.” The pressure faculty feel to be accredited is related to the many benefits that result from being nationally accredited. For nursing students, accreditation allows them to participate in federally funded and state entitlement programs such as financial aid and grants. Accreditation also facilitates the transfer of credit for ADN graduates to pursue advanced studies, including RN-to-BSN and master’s programs. Consequently, potential nursing students seek out programs that are nationally accredited (ACEN, 201a).

For the nurse faculty, accreditation heightens their awareness and responsiveness to areas needing improvement by promoting ongoing, self-examination, re-evaluation, and focus on the future for continuous improvement (ACEN, 2017a). Cindy recognized the value in accreditation:
“I feel like in doing the systematic evaluation plan that we're currently working on, it is forcing us to look at the program itself and faculty in all of these different ways.” She continued: “I think what's important to me is evaluating the students' needs and are we meeting them. Then hopefully we get accreditation. I think that's a big evaluation of a program or that'll be a nice little feather in the hat.”

At the time of the interviews there was only one national accreditation for ADN programs: ACEN. To be ACEN accredited, a nursing program must pass six standards: Standard one, mission and administrative capacity; Standard two, faculty and staff; Standard three, students; Standard four, curriculum; Standard five, resources; and Standard six, outcomes (ACEN, 2017b). Many nurse faculty I interviewed mentioned that their program committee structure mirrors the ACEN standards. Sheila reported: “Our nursing department is divided into 3 committees. We have a curriculum committee, an evaluation committee, and a resources committee.” Barb shared, “Then the nurse faculty is further divided into committees that match the ACEN standards.” Amanda mentioned, “Then so the first Thursday of the month we have an accreditation meeting. Where we talk about everything, we need for ACEN. We go through all the standards. Everybody's on a standard committee.”

ACEN requires that a nursing program continually assesses and makes improvements in the educational quality of the nursing program based on data (ACEN, 2017a). This arduous process for nursing programs requires nurse educators to monitor the standards and address changes as they occur. Emma mentions this frustration:

I have standard four of the ACEN document, the accreditation document. I was assigned curriculum, and I've done it, we have a new interim director who came in and she actually, we were writing the whole thing according to the 2013 standards, they hired her in August, and she said, “No, we're doing the 2017 standards.” I'm just about done
changing the whole thing and to be honest with you, I'm not very happy about it, not at all.

The participants in this study shared that they feel pressure to have high NCLEX pass rates and maintain the standards set forth by ACEN. However, the frustrations they felt were related to keeping up with the changes in the NCLEX test blueprint and ACEN standards. In the next section, I will explore the participants’ experience related to resistance to change.

**Resistance to Change**

An additional subtheme that recognized another frustration expressed by ADN faculty is the “resistance to change.” The pressure to cut content and then deciding what to cut is a contentious issue and can lead to resistance among colleagues. Sara was so opposed to cutting content that when asked the question, “What do you think could help you, or the program, reduce content?” she replied, “I'm not going to answer that one, mainly because I don't want to reduce content.” All the other faculty I interviewed agreed that cutting content was necessary, but complications emerge when faculty must decide what content to decrease. Chris remarked that:

> It seems to be a battle every time we have a meeting too. It's like, "Well how do we fit this in here? I'm already full on teaching twice a week ... these courses and I have no room." "Well, you have to make room." "Okay. I do that how?" People are a little resistant to that too.

Sheila believed resistance to cutting content is “Because people get so territorial over their chunk of the pie.” And she went on to say: “Even to the point where they're like, ‘Well nobody else can teach my content’.” Dalley et al. (2008) explained that the emotional struggles to let go of cherished content can be hard. Even with consensus on the need to de-crowd the curriculum, faculty will be wedded to their own specialty nursing content and protect the content associated
with their own clinical expertise. Thus, attempts at removing content usually result in nothing more than a rearrangement of content (Giddens & Brady, 2007).

Yet other faculty members I interviewed believed that some of their colleagues, especially those with years of teaching experience, are just resistant to change. Lauren mentioned the following when asked about curriculum change in her program: “There's a couple issues. It's probably more so for people who've been here a very long time and don't like the change. That seems to be what happens because two weeks ago there was a huge argument in the meeting.” Carly stated: “I want to change. I am younger than most of everybody else and a lot of times change is hard so that’s just my hope to just kind of incorporate that change.” Chris reported: “Most of the faculty actually seem to be very open to changes. The ones that have been here for over 10 years and are set … They're all like, ‘We can … A little bit slower maybe.’” Amanda mentioned: “the problem we have is trying to teach old dog new tricks” when I asked her about decreasing content in her nursing program. Molly declared: “Most of nurse faculty is older and they don't change so easily.”

Change in general is stressful for most people as it requires planning, collaboration, compromise, and effort. Curriculum change, especially at the program level is a slow, arduous process that is stressful for faculty. This stress can result in a resistance to change. It is not surprising then, that the participants in this study discussed conflicts that occur among nurse faculty, especially when changes are being made. In the next section, I will review another source of stress for nurse faculty, there is never enough time.
Never Enough Time

The final subtheme recognized one more frustration expressed by ADN faculty which is that there is never enough time. Nurse faculty protest that they do not have enough time to teach all the content that students must learn (Dalley et al., 2008) let alone update the content as needed (Adewuyi et al., 2018; Elliott & Patterson, 2017). Liz stated: “It's difficult because there's too much content in nursing. It always feels like there's too much content and not enough time.” Jessie reflected:

I think there's time constraints, it's a big part of it. There's so much that you want to teach the students and there's only so much time to teach everything and you feel like you need to get in all the information like for nursing. You need to get in all that information for them to pass the NCLEX for instance. I think that part of it is time, just having time to fit that in.

When asked about barriers to integrating QI into nursing curriculum, Nancy responded, “Time. Content overload. You know how that goes. I would think that time constraint is probably the biggest thing.” Molly agreed: “Time. Number 1, time!”

In addition to a lack of time to cover, evaluate, and update content, nurse faculty also expressed concern that a lack of time interferes with their ability to use innovative teaching strategies. Jessie remarked:

When you use all these alternative strategies they take more time. It takes more time to have small group work and sit there for five minutes while they all do their thing than it is to just talk and tell them everything you want them to know. It gets back into how much time you're devoting to it… Even these games they're fun and they like them and they work but they take more time.

Kelsey concurred:

I think all faculty are open and willing and desire to be good instructors. We want our students to be successful, but we just don’t have the time to think of new strategies, but we do it we all do it, but I think that we don’t have time to do it well so …
Jessie and Kelsey, like many of the participants I interviewed, would like to be innovative in their teaching and incorporate alternative teaching strategies. But with so many demands on their time for curriculum changes and evaluating these changes innovation does not get enough time devoted to it.

Faculty explained that having resources is helpful, however, researching and learning how to use resources also takes time. Sheila stated:

We don't have the time to investigate all of the resources that are out there. It's hard. I feel like people keep throwing resources at us ... Presenting over lunch, bringing in lunch, presenting us this new thing, but the resources ... Between time and money, are limited. It's hard to integrate new things.

Chris agreed:

They’re always bringing in people and showing things, and even faculty that do things a certain, specific way go through how they do things in that helps to educate everybody else about other options that are out there. Sometimes these other options are a lot more work.

Faculty lamented the lack of time available for teaching content, making curriculum changes, and implementing alternative teaching strategies. In addition, the nurse faculty I interviewed expressed a lack of time to use the resources available to them. This concern is driven by the vast amount of current and evolving curriculum and instruction resources and the time required to investigate and learn them.

To sum up this second theme, I presented evidence that demonstrates why study participants were frustrated with continual curriculum change. Nurse faculty acknowledged that rapid changes in healthcare necessitate continual change in nursing curriculum; however, the participants were exasperated with the amount of content they need to cover, the time needed to make curriculum change, the time required to evaluate curriculum outcomes such as NCLEX pass rate and program outcomes, the lack of time available to implement alternative teaching
strategies, and the time needed to explore and apply current and evolving curriculum and instruction resources.

ADN Faculty Need Proactive Support and Resources to Keep Up With Change and to Implement Innovative Teaching Strategies

The third theme identified in this research study was that ADN faculty believe that innovative teaching strategies are important but many do not believe they are innovative. Cindy admitted, “I always feel like I'm behind the eight-ball when it comes to innovation. I think I'm creative. Innovative to me sounds techy and I don't know that I'm all that techy all the time.” She continued, “I really tried to push myself to incorporate more simulation and critical thinking. I don't know if that's innovative, but it's as innovative as I've been.” Many of the other participants I interviewed were also uncertain if what they were doing could be considered innovative. Kelsey exclaimed, “Innovative, online quiz taking, I don’t really know if that's very innovative, but something new that we’ve done.”

Thus, faculty need proactive support and resources to not only keep up with change but also to implement innovative teaching strategies. In this last section the subthemes of innovative teaching strategies and proactive support and resources will be discussed.

ADN Faculty Agree that Innovative Teaching Strategies are Needed

ADN faculty agree that innovative teaching strategies are needed as recommended by the NLN. True innovation requires curiosity, courage, and collaboration. Thus, an innovator must be future oriented, not afraid to fail, and comfortable asking for help. Innovators do not just improve processes; they create new processes (National League for Nursing, 2003). Many of the
faculty I interviewed shared ways they were being innovative such as case studies, group work, the flipped classroom, and simulation. Jessie mentioned:

Yeah, Pat Benner. She spoke at this conference which was really great. To hear her was pretty cool but ... That's basically what she said, “We need to reduce content, come up with alternative strategies." I've tried to come up with more of the alternative strategies. I use a lot more case studies now to try to encourage more critical thinking rather than just telling them everything. I'm using more case studies and I'm using more small group work and I'm trying to really incorporate all these alternative strategies.

When asked about the innovative teaching strategies they are using, most of the faculty I interviewed expressed that they are moving away from the traditional lecture and PowerPoints in favor of more active learning methods. I was surprised to hear how many participants disliked PowerPoint as a teaching aide. Nancy discussed her feelings about PowerPoint, “most of us teach PowerPoint, and we hate Power Point. I hate it. Trying to get away from it.” Emma stated, “I think that faculty have got PowerPoint happy, I've cut my PowerPoint's in half and used questions.” Carly said the following about her use of PowerPoints, “I think this is just key for education is just using the variety of not just PowerPoints and limit the PowerPoints. I’ve scaled my PowerPoints way down.”

However, PowerPoint is easy, familiar, and relatively quick to change. Chris explained: “First thing I did was go back to PowerPoint because that's what I've always had and that's how I was taught. It's the easiest thing for me to set up.” She further explained how simple it is to make changes in PowerPoint, “Whereas if it's in PowerPoint, you just delete, delete, delete. I'll add this in. It's so much simpler that way.” And, the stress involved with trying new activities can drive faculty back to instruction with which they have high levels of comfort. Emma noted, “Once there's stress involved in these processes, you end up going right back to your PowerPoint's…I
find myself bagging it a little too quickly. If someone's asking me something, next thing I know, I got the PowerPoint on the projector. ‘I can show you better here’.”

Along with the decreased use of PowerPoint, faculty are also decreasing the amount of time they spend lecturing. Sheila remarked that she wants “the discussion to be somewhat organic. I don't do a lot of slides, I don't do lecture, I don't do anything like that.” Nancy concurred, “I think that almost all of us are trying to get away from the sage on the stage.”

The flipped classroom method (FCM) is an innovative teaching strategy that promotes student-centered learning through active learning strategies. The flipped classroom involves a reversal of traditional teaching where students first gain exposure to new material outside of class, usually via lecture videos or podcasts and then class time is used to do the harder work of assimilating that knowledge through strategies such as problem-solving, discussion or debates (Betihavas et al., 2016). The FCM is not a curriculum design, however, but instead an innovative teaching strategy that provides students with the opportunities to critically think about and apply the knowledge they obtained outside of the classroom to the real-world (Barbour & Schuessler, 2019). Many of the nurse faculty I interviewed mentioned that they or their colleagues were using the flipped classroom as an innovative teaching strategy. Kelsey mentioned:

I think that we do a lot of things online, like to give the students the material ahead of time like Panoptos or I think we call it flipped classrooms…They can just watch them [recorded lectures] repeatedly online before they come into class… and then when they come to class we can do activities, case scenarios, question and answer…

The flipped classroom allows the instructor to devote the class time to application of the material through active learning activities. Molly said, “With having the same amount of time and being able to do it more in a flipped way and bring some activities to the classroom, I think is more meaningful. I've cut the number of hours lecturing.”
Although the flipped classroom allows time for in class active learning activities, and decreases the time spent lecturing, it does not solve the content overload problem. In fact, the content that students need to learn for a flipped classroom may increase because faculty feel they can just put all the information in a PowerPoint that students review before class. Amanda described the flipped classroom: “With reducing our credit hours is going to force people to flip the classroom. Turn things back on the students. Have them come more prepared or have them do a video at home or something like that.” Nancy said: “flipping the classroom is a big thing” but believed that “it's hard for those students to get away from the, ‘Here's my Power Points, you're going to tell me all about this’.”

Another problem with the flipped classroom is ensuring that students complete the work before class. Nancy mentioned: “One lecture per module I've been recording so they can listen to it ahead of time. I can't tell you how many actually do.” And if students don’t do the work before class they may be at a disadvantage. Emma explained:

I think it's fabulous, and that's part of the initiative with having students do pre work and then try a flip classroom. I think if you use that type of strategy that as a program, you need to be aware that what you're going to have is the inverted bell curve, you're going to have the people getting the A's and B's in your courses, and you're going to have a huge recidivism as a dropout rate. That's because there's the people that are going to read every word, I have an example of this, in my foundations lab, I have two students that they make flash cards off of every single test question on these multitude of test banks, and they come in, and ask me about the ones they don't know and then I have three students that have not taken one quiz yet and it's the fifth week. Two would get A’s, three would be gone.

Shelia is concerned that faculty may believe they are flipping the classroom when they are not doing so in the intended way:

It's so funny with pedagogy I feel like people pick up a buzz word and say they're doing things and then they're not exactly doing things the way it was originally intended. I'm saying these things with a caveat. I don't know if I had to go sit and watch someone's class, I don't know if they're actually flipping the classroom like they're saying their
flipping ... Like, the industry thinks flipping classrooms ... I know that there are people who say that they're flipping the classrooms. I also sometimes think it's just to augment their lecture time ... They're putting lectures out there. I am personally doing that.

Research into the effectiveness of the FCM has consistently found that use of the flipped classroom in higher education yielded no significant difference in academic outcomes such as exam scores and final grade averages when compared to the traditional lecture model (Betihavas et al., 2016; Gillette et al., 2018; Holman & Hanson, 2016; Islam, Salam, Bhuiyan, & Daud, 2018; Njie-Carr, et al., 2017) despite requiring considerably more faculty time and resources to be delivered effectively (Gillette et al., 2018; Ward et al., 2018). Yet, Dehghanzadeh and Jafaraghaee (2018) found that FCM had a positive impact on the behavioral domain of critical thinking. However, more rigorous research is needed to determine an evidence base for FCM. Carly astutely summed it up, “I think a complete flipped classroom is not necessarily the answer, but I think that’s probably still being researched.”

Many of the participants I interviewed expressed that they were using simulation as an innovative teaching strategy. As Molly explained, “as we write the new curriculum, we're putting more simulation in, we're replacing some clinical time with simulation.” According to Lauren, “Some people love simulation, so they're like, Put more sim.” Cindy stated, “I really tried to push myself to incorporate more simulation and critical thinking. I don't know if that's innovative, but it's as innovative as I've been.”

Simulation is a mock representation of a real-world process to achieve educational goals through experiential, active learning. Simulation based nursing education includes any educational activity that utilizes simulation aides to replicate clinical scenarios. Simulation increases student interest and allows them to learn in a safe, risk-free environment (Giddens, et al., 2008). Barb asserted: “We know that clinical simulation works. It makes sense to use that as
an innovative strategy. It's a patient safe situation.” In addition, simulation facilitates the application of concepts learned in the classroom to specific clinical situations and can provide nurse faculty the flexibility to create student specific experiences that cannot be duplicated in real clinical settings (Giddens et al., 2008). For example, Nancy mentioned: “We have some places that don't let them do IVs so we're utilizing the sim lab. We take those students for a day and intensely work with them in the simulation lab with the IVs.” Barb stated: “I will say that using clinical simulation in nursing education, we have structured clinical simulation experiences for each course in our curriculum.”

Simulation is also used to promote clinical decision-making skills, teamwork, delegation, inter-professional collaboration, and communication. Lauren discussed how her program uses simulation to promote collaboration with other healthcare disciplines, “The radiology program will join us or the fire service program, they come over and join us to do an interactive, inter-professional type of activity to show the different roles that we all play in patient care.” Cindy shared her experience with this approach:

We do an inter-disciplinary with EMT. They bring in patients from their field so they've been ... We do a mock car accident or a mock burning building and then because MCC also has the EMT paramedic program, so they're responsible prehospital assessment, getting them out of a car, whatever. I'm not well-versed in what their expertise is. They bring them in on a stretcher and our SIM lab functions as the ER. "Okay, what report would you want to get from the EMT?" It helps with that communication between the prehospital and ER nurses.

Research into the effectiveness of simulation has showed promising results. In a systematic review of the literature, Cant and Cooper (2017) reviewed 72 studies of simulation-based learning and found positive outcomes for learning, especially related to knowledge acquisition. However, they also concluded that larger studies which use higher-level designs and valid assessment tools are needed to prove the effectiveness of simulation.
Currently, simulation is being utilized as a replacement for clinical time. The debate about how much simulation time can be used to replace clinical time continues, as Sheila mentioned:

I know there's that NCSBN ... Study, that shows you can go up to what is it? 50%...I think they had them randomized, at 25, 50, and 75%, there was no difference between the 25 and 50% but the policy came out at 25% if I remember correctly.

The study that Sheila referenced was a large-scale, randomized, controlled study conducted by the National Council State Boards of Nursing to determine if the percent of clinical hours replaced by simulation influences program outcomes. Students were randomized into one of three groups: students who had traditional clinical experiences (no more than 10% of clinical hours could be spent in simulation), students who had 25% of their traditional clinical hours replaced by simulation, and students who had 50% of their traditional clinical hours replaced by simulation. They found that at the end of the program, there were no statistically significant differences in clinical competency, comprehensive nursing knowledge, and NCLEX pass rates between the groups. Thus, they concluded that simulation is a valid replacement for clinical hours (Hayden et al., 2014).

Curl et al. (2016) replaced 50% of the traditional clinical hours with simulation and evaluated the students’ end of program outcomes. The researchers found statistically significant higher end of program exam scores for students exposed to simulation. However, to date, simulation has been used as a replacement for clinical hours and not as a curriculum model. Consequently, although simulation is a valuable learning activity that adds to positive student outcomes, it is not a new pedagogy for curriculum reform as requested by the NLN and IOM. Yet, with further research and the development of a conceptual framework, perhaps simulation could be the paradigm shift that is needed.
New pedagogy has been recommended for nursing education that teaches students how to think, rather than simply covering content (Forbes & Hickey 2009). Although the FCM and simulation are innovative teaching strategies, they have not proven to be the paradigm shift that was mentioned by the NLN. This deficiency is primarily because these approaches do not decrease the content overload that frustrates nursing instructors. However, an innovative change that a few of the participants mentioned, which has the promise to reform nursing curriculum, is the concept-based curriculum (CBC). Both Liz and Chris work in nursing programs that revised their curriculum to be concept-based. Nancy and Jessie’s and Sheila’s program are moving towards being a CBC.

The CBC was introduced in the mid-2000s and builds upon constructivism theory, which assumes that people construct their own knowledge of the world by reflecting on their experiences (Sportsman & Pleasant, 2017). CBC is seen as a solution to existing content heavy, disease focused, and population fixated curriculum that is taught in separate boxes, such as medical-surgical nursing, pediatric nursing, and mental health nursing (Trossman, 2015).

According to Liz:

One of the reasons we went to concepts based was to reduce the issue of constantly getting more and not taking things away… We decided that we would go with the concept based because we thought that our students going into the future, are going to be faced with things that we have not been faced with. They needed something that would put them in a position to where they could adapt it to whatever situation they might be in whether it was a different type of a setting or whether it was something new that changed.

In a CBC content is de-emphasized, students are engaged in activities to foster critical thinking, and concepts are presented across the lifespan and reinforced throughout the program (Giddens et al., 2008). Liz explained its essence:
Well, I know that the idea is that you teach the concept first. Our new curriculum, which we've gotten approval for and everything's integrated. Something that's introduced in the first semester is going to then be reinforced in another semester.

The goal of the CBC is to get away from teaching the facts for every health issue in a piecemeal approach. Rather, a CBC is designed around global concepts critical to individuals, nursing practice, and health care. The concepts are not based on any one theory, but rather reflect contemporary literature and practice trends in health care (Giddens et al., 2012).

In a CBC, students learn about concepts broadly - such as oxygenation, safety, healthcare quality, infection control, communication, and ethics. Chris lists some of the concepts adopted for her nursing curriculum, “There's Oxygenation, Mobility, Palliation, Clotting ... There's all kinds of stuff.” Conceptually based curriculum do not rely on a single design, and faculty are responsible for determining the concepts they wish to include in their curriculum. Therefore, colleges can still have their unique programs (Trossman, 2015). Chris mentioned the broad concepts in her program:

incorporated into different classes. Each class gets like ... You have a big focus on this. You'll get 8 concepts, essentially. These are the big ones you really need to hone in on. You're also supposed to touch on all the others, or at least part of the others. We'll touch on another 8 ... Maybe we'll recap those. The next class, we'll recap a few other ones. It flows throughout the whole program.

Liz discussed another part of the CBC, the exemplars:

The idea would be that then being concept based, and we would choose concepts that we felt would cover as much as possible and then use specific exemplars that we then could use as examples, so to speak of whatever that concept was. In other words, the student could take from that, if you have a patient that has a variation of that, well the same concept still applies. You don't have to teach them 3 different conditions, but rather you teach them really well 10 conditions. You can do a compare and contrast. You can do Venn diagrams, you can do a number of different things.

Exemplars are content based scenarios that best represent the concept being presented.

They are situations or cases that help students understand the concept by forming links that
connect learning to real-life situations, where learning is retained, retrievable, and applicable (Lee & Wilson, 2017). These exemplars are selected by faculty and should represent individuals across the life span and in various settings to allow students to apply concepts in a variety of contexts. Faculty must be very selective in the exemplars used to represent concepts; use of excessive exemplars could result in content saturation and defeats one of the benefits of the concept-based model (Giddens & Brady, 2007). Jessie mentioned the following about exemplars: “It's like when you take the diagnosis and then you use that to try to teach everything. Like say I could use the asthma, based on asthma I could teach all about respiratory.”

Other faculty discussed concept-based curriculum and how they are not truly concept-based as described in the literature. When asked if her program is concept-based, Kelsey replied:

I would say that we're half and half currently, striving to be concept-based soon. We've been trying apparently since before I got here to be concept-based, but I think we kind of all still do what we did and just call it concept-based, so we're trying.

Nancy stated, “Ours is not a concept-base, even though it says concept, we're working towards that.” Sheila and Jessie have a program that says it is concept-based but Sheila questions if they just say they are concept based: “We are a concept-based program. It's so funny with pedagogy I feel like people pick up a buzz word and say they're doing things and then they're not exactly doing things the way it was originally intended.”

Teaching a CBC as it was intended is important because as Chris mentions, “Supposedly, the studies all show that the concept-based curriculum actually helps students retain more information and get better NCLEX; but we have to be able to teach it properly then too.” She explained how her program’s NCLEX pass rates declined with the CBC and how now they are adjusting the curriculum to address the problems, “During the transition, something got lost or
missed or something. Now we're trying to backtrack and figure out what exactly happened there, and how do we get back to it.”

Because of the relative newness of concept-based curriculum in nursing programs and the complexity of establishing a causal relationship between the type of curriculum offered and the resulting student outcomes (NCLEX pass rates, attrition, graduation, and employment rates), published evaluations of the curriculum model are scarce (Murray et al., 2015). Additionally, longitudinal, multisite studies are absent that evaluate the impact of a CBC upon nursing student outcomes (Sportsman & Pleasant, 2017). However, several researchers found a decrease in NCLEX pass rates with the initial implementation of a CBC. Whereas some researchers explained that this decrease was due to the stress that comes with curriculum change (Giddens & Morton, 2010; Kumm & Laverentz, 2017), others attributed the decrease in the NCLEX pass rate to a new NCLEX test plan (Duncan & Schultz, 2015; Kumm & Laverentz, 2017).

Other researchers found little evidence that implementation of a CBC changed the program outcomes, including the NCLEX pass rates (Sportsman & Pleasant, 2017). Yet other researchers found an increase in NCLEX pass rates with the implementation of a CBC. Lewis (2014) noted a 1% increase in NCLEX pass rate, although statistical significance was lacking in the study. Harrison (2018) reported that students’ probability of a NCLEX pass score, and students’ ability to pass the NCLEX on the first attempt increased with the implementation of a CBC. Edwards (2015) described a significant relationship between students using the concept-based curriculum and NCLEX pass rates; 85% of students using the concept-based curriculum passed the NCLEX-RN as opposed to 73% of students using the traditional content-based curriculum.
Designing, implementing, and evaluating a new curriculum such as a CBC or active learning strategies such as case studies, group work, the flipped classroom, and simulation takes time and many resources. The need for proactive support and resources will be discussed in the next section.

**ADN Faculty Need Proactive Support and Resources**

The last subtheme related to the need for support and resources for ADN faculty. For curriculum reform to occur, faculty need support, guidance, and resources. Active learning strategies such as simulation, projects, and case studies are commonly used to integrate QI into nursing curriculum (Kirby & Good, 2020). However, these strategies take more time to develop and implement than standard lectures (Gillette et al., 2018; Ward et al., 2018). For example, McLaughlin et al. (2014) found that the FCM takes 127% more time to implement and 57% more time to maintain compared to a lecture course. Likewise, researchers have reported that a CBC is difficult to implement because it requires a great deal of faculty time to develop, implement, and evaluate (Kumm & Laverentz, 2017). Thus, adequate support and resources for ADN faculty are needed.

This support includes technical and administrative support. In particular, administrative support is needed to help modify faculty workloads to accommodate the time and effort needed to design and implement curriculum changes, including active learning strategies (Betihavas et al., 2016; Islam et al., 2018; Trossman, 2015). Administration should provide adequate support and resources for nurse faculty planning to implement a CBC or incorporate active teaching strategies into their classes (Hickey et al., 2010; Sportsman & Pleasant, 2017). This support can take the form of release time from teaching duties as Molly described: “Everybody’s worked
really, really hard. It still takes a lot of time. Fortunately, this semester and next, some of us actually have release time…The college is supporting it as well.”

Another form of support is extra staff and extra pay. Emma commented on such support when she and her colleagues revised their curriculum:

We were really well supported as far as our administration goes, in that they gave us a stipend to show up at those meetings, they supported having no classes on Monday afternoon so that we could get this thing done, allowed us to hire a full time temporary person so that we had a little bit better resources. It's how we got the work done.

However, after the roll out of the new curriculum, extra staff and extra pay decreased and the focus on curriculum waned. According to Emma, curriculum “gets driven to the back of faculty meetings, we have no faculty time that we devote to that. It's an agenda item, and the first agenda item.” She goes on to say that other topics take precedence “I got called in the hallway today. The health careers specialist comes out in the hall and says, ‘This faculty person's out, can you do her labs next week?’” Sara also discusses the shortage of faculty “I'm full time and really carrying a huge load because many of our instructors resigned. It's put the pressure on all of us to carry the load.” Administrators need to support not only the development and implementation of the curriculum but also the evaluation and revision that are necessary. This support could be accomplished by funding meetings focused on curriculum. Nancy says the following of her curriculum, “Part of the process is continual changes and improvements. We meet as a faculty and we try to figure out how it's going. We meet regularly and then in May we have a three day intense workshop.”

Support for major curriculum changes such as implementing a CBC can also come with the assistance of a consultant or expert in the field. Liz discussed the importance of a consultant when her nursing program implemented a CBC:
Well, as I said, we had a consultant, and I think she was with us for about 2 years. She wasn't here all the time... In having a consultant, in having her come back, in having her work alongside of us, I felt that it got to the point where we felt like we owned what we developed. We weren't given something from someone that said, this is what you need to do, this is how to do it, A, B, C, D. We kind of pulled it like taffy, and we made it our own. If there was something that the consultant said she felt it should be this way. We'd look at it, all of us, and we'd all give our opinions on it. We'd state what we thought that it should be basically what we wanted it to be, and that was it.

Chris mentioned how some states have utilized experts to assist nurse faculty in implementing a mandated CBC:

There's other states that actually mandated that their colleges and universities to switch over to concept-based curriculum. They have a state board of advisors that run everything, set all the dates for implementation, and how to switch over... Crazy stuff. These people... A couple of them have come in and said, "Okay. Here's what we did. Here's how we made this work for us." They're doing well with it. Especially on a state level.

Administrative support for faculty can come in the form of release time, extra pay, extra staff, or the use of consultants and experts. It is important to note, however, that such support should not only be offered during the development and implementation of the curriculum, but also for the evaluation and revision of the curriculum.

Kelsey explained that resources which include creative teaching strategies should be readily available to all nurse faculty because not all faculty have the time or skills needed to create alternative teaching tools. She said, "There are those instructors who struggle with creativity I think that that is a struggle for them, I don't think they should be spending their time figuring out a way to teach them but have it available." Many of the nurse faculty I interviewed reported using the resources that are available from QSEN, NLN, and textbook publishers, but they have found that the resources are not always helpful. When asked about the resources from QSEN and NLN, Sara replied: "All of us have felt the same way. They're just not the strong area that we want to go through. It's still not what we're looking for." Emma reflected:
I would say that QSEN has value, a lot, for us. We do rely on that type of information the most. As far as the NLN types of resources, I just belong to it, myself. I go to the stuff. I find that the white papers are nice, but it just doesn't do it for me, I'm going to be honest with you.

Other faculty reported that some resources can be hard to find. According to Lauren: “When I look on the QSEN site, I have a hard time with it. Things, to me, are not very accessible or where I would think something might be for me to use or formatting sometimes.” Yet other faculty feel that there are too many resources and it is difficult to determine which ones to use. Nancy shared: “There's a lot of resources. We have them but do we utilize them all? No.” Sheila agreed:

We don't have the time to investigate all of the resources that are out there. It's hard. I feel like people keep throwing resources at us ... Presenting over lunch, bringing in lunch, presenting us this new thing, but the resources ... Between time and money, are limited. It's hard to integrate new things.

Cindy discussed how she has difficulty adapting the resources to her needs, “I can't say I'm a huge fan of the textbook ones because sometimes I feel like it just doesn't fit… like my teaching approach or sometimes it doesn't fit in my class the way they constructed it.” Jessie had the same problem “QSEN has some really good resources actually… The ones that they have don't particularly work for me with my content, but I have looked to see what they are.” Molly stated: “NLN, I tried to use some of their scenarios for simulation, but they don't always meet my objectives… I'm not sure they're really meeting my needs.” Kelsey mirrored Cindy’s worries, 

Easily presentable evidence-based practice. There’s a lot of evidence out there and I know there is because I’ve read it. I read stuff all the time 24/7 so I know that there’s evidence out there that will back up what QSEN says otherwise QSEN wouldn’t say it, but it has to be easy to read and apply.

Another concern faculty voiced was that by the time textbooks are published much of the information is outdated. Barb said: “The resources that I've used so far are mostly from our publisher. I've been reasonably satisfied with them. Again, there's been some gaps where I feel
like the information that we have isn't the most up to date information.” Cindy also discussed this problem and is using Open Educational Resources (OER) as part of a solution.

I feel like the textbooks are out of date. Perfect example, today I lectured on stroke before this and so I went to the NIH. We did the NIH stroke skill together, went through all of that, but I also went to the American Stroke Association, what's the standard of care at this point in time. There was new documentation that came out in June of 2015 that said, "These are our standards and recommendations from American Heart and American Stroke," but that's not in our book.

Emma preferred not to have to pay for her resources.

We went to the NLN conference, the national conference, a couple of us went. It was just like a pay to play kind of organization, just really didn't do it for me. I found myself back in the regional simulation stuff, looking at projects there. It just seems to fit.

Sheila has pulled away from using a textbook to a publication she thinks students can use in practice:

I do use a book, but it's a book I think that they will be able to use for the next 5 years… It's a capstone coach, it's about this big, it has so much information. It has issues related to ethics and legal issues, communication, delegation all those kinds of leadership, but then it also has a whole chapter on diagnostics, it has a chapter on assessment, it has a chapter on clinical skill … It's a teeny tiny book that it's like one of those things you can either put in the pocket of your scrubs or you can put it in your locker at the hospital, or wherever you go eventually, and refer back to it. It's, again, because we teach in a community college with students who may have limited income … I know a 75 to 100 dollar book that they'll read for one semester and just then sell back, or do nothing with, just didn't seem to work for me.

Having resources that are easy to apply, modify, and update is important to nurse faculty because it takes a lot of time to implement new teaching strategies and faculty do not want to waste precious time making multiple changes. As Chris shared,

Initially, you got to do all this extra stuff to get to where … Then you still … Like I said with the Quality Improvement issue, you still need to be going through whatever you've done and that information that you're putting out there. If something has changed, you either have to edit, change, or redo the whole lecture type, informational point of that, which is not good.

Cindy discussed how hard it is to try something new and have it fail:
I think that's where faculty are hesitant to go too far outside the box. You're at such a time constraint so if I just spent two and a half hours of my day, I took a full lecture day to do this and it was a complete waste, I just wasted the only lecture day I had to cover that topic. I think that's difficult.

Several of the nurse faculty I interviewed believed that faculty were using creative teaching strategies, but these resources are not being shared. Carly mentioned, “They’re very private. They don’t share much.” Kelsey explained this phenomenon:

there are a whole lot of really good ideas out there amongst faculty and we don’t … I don’t know if we do this on purpose or because we’re so busy we just don’t do it, or there’s not a way to do it a mechanism of doing it, but we don’t share very well.

Lauren agreed, “Some people like to keep stuff a secret, which I always giggle at, because I'm like, What's so secretive? …You didn't come up with it by yourself. You got it from somewhere else, so why would you keep it a secret?”

Kelsey wished that there were better opportunities for faculty to share their resources and she suggested that there should be “a newsletter for the faculty that says, ‘This is a new resource, or this is available for this.’ And easy to read and easy to find, because we don’t have time to peruse the internet for useful resources.” She also proposed:

A faculty toolbox, here’s a book of innovative faculty teaching strategies. These are ideas that have come from different faculty from all over. There’s a lot of us, there’s a lot of nurse faculty in the United States so we should be able to come up with … Every school to submit 3 ideas, imagine what great work that would be. I’d pay for that.

The participants believed that many resources were available to them. However, they found the resources to be outdated, irrelevant, and costly. Further, they noted that the resources were difficult to locate and adapt to their individual courses. Some faculty believed the resources would be more useful if methods and desires for sharing them were greater.
The NCLEX is the final step before a nursing graduate can become an independently practicing nurse. This computerized examination ensures that graduate nurses possess the basic competencies required to safely practice as registered nurses. Most states, and all accrediting bodies use a nursing program’s NCLEX pass rate to assess the program's success; thus, schools of nursing must adequately prepare students for the NCLEX (Foreman, 2019; Quinn et al., 2018). Sheila expressed that many curriculum decisions are driven by the NCLEX, “A lot of that is driven by, ultimately, the need for them to be able to do NCLEX. The licensure exam.”

According to Nancy, “The ultimate thing is the NCLEX, you know the pass rate. Unfortunately, that is a driving factor.”

Many of the nurse faculty I interviewed mentioned that the NCLEX test blueprint is an influential factor for deciding what content should be included in the curriculum. The curricular emphasis that faculty place on content that is relevant to NCLEX success is understandable given the consequences of NCLEX pass rates. Therefore, nurse faculty commonly use the NCLEX test blueprint to structure curriculum (Partusch, 2008). Chris discussed how nurse faculty determine a topic’s importance in the curriculum based on the percent of questions the NCLEX gives to that area.

Okay, so NCLEX is going to give us … 30% of our questions are going to be Cardiac. We're going to have 15% of our questions on respiratory things. You're going to have 8% on this. Quality Improvement is how many questions? You're telling me I need to have this much information in there, but I'm only going to have maybe 5, 7% of the test is going to be on Quality Improvement. If that was weighed out heavier, then it would definitely be a higher priority because then they would see that they have to know this…With Quality Improvement, if they say, "You're going to have a substantial amount." It's now one of the major players in this whole thing regardless of how they're incorporating it or what other issues are going with it. That would cause just about everybody to stand up and take notice and say, "You know what? We have to do this. This is a big player now. It's not just something we mention and tossed to the side. We have to be incorporating more of this.
Sheila expressed an obligation to use the NCLEX test plan as a guide:

I think I have a responsibility to look at the NCLEX test plan, more so than our curriculum, per se, I'd say ... Obviously I have a course outline that's gone through a curriculum committee, and that ... It has been approved. Again, I don't think it's that different than any other nursing school. The NCLEX test plan is another aspect of ... I guess I should say location of information, or source of information, that I'd used in developing the courses and the content for the courses.

However, the greatest aggravator for the participants was the lack of a comprehensive NCLEX test blueprint. Participants voiced the need for a more focused NCLEX test plan that would advise ADN faculty on topics to include in the curriculum. Cindy expressed this wish:

I would like to see a change in the NCLEX blueprint... That would guide, I mean I don't believe in teaching to the test, but knowing that some of these topics will not be covered or taking ... This would be ideal, like I know this would be Santa Claus to a level, but if NCLEX and the textbook people could talk and say, "Okay take this out, take this out," that would be fantastic.

Chris discussed the value of knowing what content she should be teaching.

Boom. Lay it out plain and simple. It's right there. Do it this way. No questions asked. Then I know, I'm going to teach this this day, and this this day. It's all fixed. Hopefully the students pass NCLEX. That's all we're trying to prepare them for, essentially.

A program’s NCLEX pass rate is a measure of their program’s quality and success. Thus, it is not surprising that the participants expressed a need to address the NCLEX requirements in their curriculum and include content related to it. Although the NCSBN does provide a NCLEX blueprint to assist faculty with curriculum development, the participants believed that the NCLEX test plan was not sufficient or specific enough to guide faculty on what is most important to include in their curriculum.

Many ADN faculty would like to have standardized guidelines to help them plan curriculum. Faculty who teach in BSN programs have such guidelines in The Essentials of Baccalaureate Education for Professional Nursing Practice, but ADN faculty do not.
The Essentials of Baccalaureate Education lists the most important topics to include in BSN curriculum; QI is addressed in Essential II (AACN, 2008). Further, BSN faculty have a toolkit to guide them in how certain concepts should be taught. For example, in the BSN Essential toolkit (2009), BSN Essential II lists the following activities for teaching Quality Care:

Develop a leadership or quality improvement project that spans several courses (e.g., review literature about a practice problem in one course, propose a practice change based on an evidence-based model in a second course, and then present the practice change to appropriate stakeholders in a third course). Shadow a leader and reflect on the experience. Engage in quality improvement/patient safety activities to promote an understanding of the organizational process, unit application, and evaluation process. Participate in quality improvement activities and/or required regulatory reporting systems. Participate in an interprofessional performance improvement team currently working on implementation/evaluation of national patient safety goals. Propose an innovative solution to a system-related patient care problem identified in one’s clinical practice. Conduct a mock root cause analysis on a near miss and share results with staff or shared governance council. Participate in an actual Root Cause Analysis (RCA) and/or Failure Mode Effects Analysis (FMEA). Role-play with nursing and medical students using Situation, Background, Assessment, Recommendation (SBAR) communication. Attend a professional nursing organization meeting and identify personal development opportunities. (pp. 4-5)

When asked about BSN programs having an essential that addresses QI but not having the same for ADN programs, some of the participants were shocked. Amanda stated, “I'm surprised, so they have 10 essentials and we have nothing. That's terrible. Why don't we have that? Why don't we fight for that?” Many more of the participants believed that ADN programs should have similar guidelines. Liz replied, “If something is a requirement for a BSN program, as associate degree programs, we need to look at what that is.” Sheila continued, “I think it's ridiculous. Even though it's not a requirement, we still do it. I think we have a responsibility to address quality because it's so embedded in safety.” Jessie agreed,

I think it should be taught in ADN programs. They're still going to be working as nurses on the unit. They need to know it also. I understand the bachelors is a step up in certain areas because the whole idea is that there'll be more leadership roles and things like that but I still think it should be taught in an ADN program anyway.
In this chapter I presented excerpts from participant interviews to provide evidence for the three themes I identified in Chapter 3. These three themes are: ADN faculty believe quality improvement is an important topic, but barriers hinder integrating QI into curriculum; ADN faculty are frustrated with curriculum change; and ADN faculty need proactive resources and support to keep up with change and to implement innovative teaching strategies. In chapter five I will summarize the findings from each theme and suggest implications for both research and practice.
CHAPTER FIVE
DISCUSSION AND IMPLICATIONS

Since the groundbreaking report *To Err Is Human* the focus on outcomes, safety, and quality in healthcare has increased. To help equip future generations of healthcare workers with the necessary knowledge and skills to flourish in an increasingly complex healthcare system, the IOM released a report *Health Professions Education: A Bridge to Quality* in 2003. In this report, a set of five core competencies related to the education of all healthcare professionals was proposed. Competency number four, applying QI relates to the topic of this research, namely, integrating QI concepts and the application of QI processes into the nursing curriculum (Greiner & Knebel, 2003).

In 2003, the NLN released a position statement: *Innovation in nursing education: A call to reform*. In this statement, the NLN challenged nursing to reconceptualize reform in nursing education. Specifically, the NLN suggested that “rather than focusing on adding, changing and updating content, nurse educators must focus on expanding their evidence-based pedagogical repertoire and rethink the very nature of contemporary schooling, teaching, and learning” (NLN, 2003, p.3). In 2010, the Carnegie Foundation’s report *Educating Nurses: A call for radical transformation* challenged nurse educators to move away from traditional teaching methods to implementing evidence-based curriculum (Benner et al., 2012).

This study explored ADN faculty’s perspectives regarding the integration of QI concepts into the nursing curriculum. I addressed the following central research questions:
1. What are ADN faculty views on the integration of QI concepts into nursing curriculum?

2. What do participants identify as barriers to the integration of QI concepts into nursing curriculum?

3. What have participants come to believe about innovative teaching methods, curriculum design, and teaching QI?

To address these questions, I interviewed fourteen ADN faculty who work at community colleges in the Midwest. As a result of the coding process, I discovered three major themes: ADN faculty believe that QI is an important topic, ADN faculty are frustrated with continual curriculum change, and ADN faculty need proactive support and resources to keep up with change and implement innovative teaching strategies.

QI is an Important Topic

Healthcare is becoming an increasingly complex system requiring skills that RNs may not have needed in the past; skills that include the use of QI. With an increased focus on outcomes, and the reimbursement tied to those outcomes, QI is critical to a healthcare organization’s survival because organizations must continually improve their outcomes. Consequently, this topic is no longer “nice to know”, but “need to know.”

Many of the participants reported that they have integrated QSEN competencies into their curriculum and are using QSEN as a resource for their students. These findings are aligned with the literature which reports that the QSEN project has had a positive effect particularly in patient-centered care, teamwork and collaboration, evidence-based practice, and safety for both
ADN and BSN graduates (McBride, 2019). Nevertheless, the gap between BSN and ADN graduates is widening, especially related to QI (Djukic et al., 2019).

The ADN faculty I interviewed believed that QI is an important topic for nurses to understand. Yet, participants differed regarding the extent to which this topic should be covered at the ADN level. Some believed that ADN graduates should simply be introduced to the topic. Others reported that ADN graduates should understand how QI is used in the clinical setting and how it impacts them as practicing nurses. Still other participants thought that ADN students should be able to apply QI processes at a higher level.

Review of the college catalogues and nursing handbooks for mention of QI in either the SLO’s or course description revealed that half of the ADN programs do not mention QI as one of the student learning outcomes. This omission would indicate that understanding and using QI is not a priority outcome for these graduates. Even fewer college catalogues and nursing handbooks mentioned QI in the nursing course descriptions, an omission that might imply that QI is not a significant part of the nursing courses. However, a time lag exists between approved curricular change and when that change is reflected in college catalogs and handbooks. Thus, curricular change that includes QI may have occurred but was not yet listed in the college catalogs and handbooks I reviewed.

According to the IOM (Greiner & Knebel, 2003), healthcare professionals, including registered nurses, must be taught to apply quality improvement not to merely understand the concepts. The IOM defines this application of QI as: identifying errors and hazards in care; understanding and implementing basic safety design principles, such as standardization and simplification; continually understanding and measuring quality of care in terms of structure, process, and outcomes in relation to patient and community needs; and designing and testing
interventions to change processes and systems of care, with the objective of improving quality. Further, the NCLEX-RN uses Bloom’s taxonomy as a basis for writing and coding items for the examination. Since the practice of nursing requires application of knowledge, skills and abilities, the majority of items for the NCLEX-RN are written at the application or higher levels of cognitive ability. The NCLEX test plan specifically mentions that the individual taking the exam must: define performance improvement/quality assurance activities, participate in performance improvement projects and quality improvement processes, report identified client care issues/problems to appropriate personnel, utilize research and other references for performance improvement actions, and evaluate the impact of performance improvement measures on client care and resource utilization (NCSBN, 2019). Since ADN and BSN graduates must both pass the NCLEX and meet the minimum requirements set forth in that exam, students in both ADN and BSN programs should be taught to apply QI.

The expectations for what should be included in BSN curriculum is clearly stated in the *Essentials of Baccalaureate Education* guidelines. These essentials list what knowledge BSN students should have related to QI. Yet, an expectation for what should be included in the ADN curriculum regarding QI has not been established. The ADN graduates have about half the credit hours compared to BSN graduates (60 versus 120 semester credit hours), therefore, a logical viewpoint would be that an ADN graduate will not be prepared to apply, interpret, and evaluate QI to a comparable degree as a BSN graduate. However, ADN and BSN graduates will be hired to work within similar, if not the same, healthcare systems, thus ADN students need to understand QI concepts and know how to apply basic QI principles.

I believe that ADN programs should have guidelines like the BSN *Essentials*. Furthermore, these guidelines should be written in consideration of the decreased number of
credit hours ADN students have to prepare for their role as an RN. Ideally QI will be leveled for ADN, RN-BSN, and BSN students. In other words, ADN students should not be expected to have the same level of preparation in QI as BSN students, but, a minimal level of QI preparation must be established for ADN students. This preparation could be accomplished through the types of assignments that are given to address QI. For example, in an ADN program students could be assigned to solve a problem in a simulated context. Whereas, in a BSN program students could be assigned to work with their clinical affiliates to solve a QI problem on the unit where they are completing their clinical rotation.

To accomplish this goal, ADN and BSN organizations, stakeholders, and faculty must come together and determine the extent to which each will address QI. This determination is especially critical because of the large number of ADN students who enroll in RN to BSN programs. Thus, establishing the content level of QI at each level - ADN, RN to BSN, and BSN – must ensue. Unfortunately, though, the creation of an *essentials of ADN education for professional nursing practice* and the related toolkit will not address the major frustrations the participants experienced when integrating QI into ADN curriculum.

Faculty are Frustrated

Nurse faculty are clearly frustrated. What frustrates faculty most is the content overload that happens because of rapid changes in nursing practice and a lack of time to complete curriculum change. This finding is consistent with other research that has been completed related to nursing curriculum (Adewuyi et al., 2018; Dalley et al., 2008; Gibbens & Brady, 2007; Forbes & Hickey, 2009; Waterson et al., 2006).
During the literature review, it became apparent that too much content is a problem plaguing both BSN and ADN educators. The resulting overcrowded curriculum consumes time and causes frustration for faculty. This frustration is partly due to the rapid changes occurring in nursing practice which necessitate continual changes in nursing curriculum, and partly because the add-on content leaves less time for faculty to design and implement innovative teaching strategies and/or curriculum reform. If content were controlled, nurse faculty would have more time to apply new teaching strategies and radically reform nursing education.

Another area of frustration for ADN faculty is the pressure to have high NLCEX pass rates and maintain accreditation. However, the greatest aggravator was the lack of a comprehensive NCLEX test blueprint. Participants voiced the need for a more focused NCLEX test plan that would advise ADN faculty on topics to include in the curriculum. Many ADN programs use the NCLEX test blueprint to structure their curriculum. Faculty I interviewed acknowledged that they will look at the percent of questions devoted to each topic and use that information to determine the emphasis they should place on the content related to that area. Therefore, having a blueprint that is specific to what the ADN graduates will be tested on is critical. Knowing the percent of questions that will be devoted to each category on the NCLEX is helpful. For example, participants were aware that 17-23% of questions will be based on management of care; QI is contained in this category (NCSBN, 2016, 2019). However, they do not know which disease processes, diagnostic tests, and medications will be used as the basis for these questions. Therefore, in addition to listing categories on the NCLEX test blueprint, I believe the blueprint should include the disease processes, diagnostic test, and medications that will be used for the NCLEX questions. I do not believe in teaching to the test, but I believe that
with the rapid changes in healthcare nurse faculty can be more effective in their jobs if they have an increased understanding of the content and parameters of the NCLEX questions.

An efficient way to provide faculty with this information would be for the NCSBN to agree that each new test plan, which is released every three years, would only include questions that reference medications for the published list of the top 100 prescribed drugs in America for the three years prior to the implementation of the new test plan. For example, a new NCLEX test plan was released April 2018. Based on my recommendation, the questions that mention medications would only include those that are on the 2015, 2016, 2017 top 100 prescribed medications for each year. These lists are available on the Clinicalc.com website (clinicalc.com, 2018). The data presented on this website is obtained annually from the medical expenditure panel survey (MEPS) which is conducted by the US government (Fuentes et al., 2018).

Similarly, the NLCEX test plan would include questions that mention the most common diseases for the three years prior to the release of the new NCLEX test plan. I was unable to locate data that list the top 100 most common diseases for a specific year, but references exist that the NCSBN could agree to use as a basis for identifying the diseases that will be included in NCLEX questions. For example, the CDC releases a yearly report *Mortality in the United States* that could be used to create a list of 100 diseases, disorders, or conditions that will be included in the NCLEX questions (Murphy et al., 2018).

Some healthcare stakeholders may argue that providing a list of the medications, diseases, and diagnostic tests that the NCLEX will use for its questions may lessen a student’s preparation for practice. A counter argument is that having an unknown number of disease and conditions that nurse faculty believe they need to cover leads to a decreased focus on the disease, disorders, and conditions that the students will see in their practice. I believe it is better to
prepare students for the problems prevalent in practice, not problems that are outliers. For instance, if nurse faculty know that under the cardiovascular system the questions would address the most common disorders: cerebral vascular disease, stroke, heart failure, and hypertension, then they could use these diseases as the examples to explain a concept. Further, for each of the chosen diseases it would be beneficial to have a list of the diagnostic tests that students should know related to that disorder.

Teaching students every disease process or medication is not a feasible educational goal because of the many time and resource constraints on nursing programs. Thus, nurse faculty and the NCSBN should work together to identify the diseases, medications, and diagnostic tests for which students must be prepared. This much needed information will help faculty to decide which content is “need to know” and which is “nice to know.” Armed with these better-informed decisions, content overload can be decreased and nurse faculty will be afforded more time to focus on implementing and evaluating innovative teaching strategies.

**Nurse Faculty Need Proactive Support and Resources**

The call for curriculum change in nursing education has been ongoing for decades. In the late 1980s, the NLN called for a “curriculum revolution.” Many programs responded with changes in curriculum; however, much of the curriculum reform focused on the addition or re-arrangement of content within the curriculum, rather than on significant, "paradigm shift" forms of changes (NLN, 2003). Thus, in 2003, the NLN released a position statement *Innovation in nursing education: A call to reform.* This position statement demanded innovation that questioned the nature of schooling, learning, and teaching and how curriculum designs promote or inhibit learning. This dramatic reform would uphold the true spirit of innovation and overhaul
traditional pedagogies to reform nursing education (NLN, 2003). Further, Diekelmann and Ironside (2002) recommended that nurse educators base their practice on the best available evidence and develop a science of nursing education that documents the effectiveness and the meaningfulness of reform efforts.

Findings from my research are aligned with existing research that suggests that nurse educators need to be creative and imagine dramatic changes to the pedagogy of nursing education. Instead of the traditional teacher-centered curriculum that is content heavy and focused on what faculty want to teach, a revolution to student or teaching-centered curriculum must happen (Candela et al., 2006). Such a change requires faculty to shift curriculum focus from massive amounts of content to essential concepts and abilities (Dalley et al., 2008).

Decreasing the content in nursing curriculum will require radical changes to the traditions of nursing education. Instead of a curriculum that is content heavy, disease focused, and population fixated; nurse faculty must create a new pedagogy that is flexible, student-centered, and uses teaching strategies that promote critical thinking. Many of the participants mentioned innovative pedagogies and strategies that they were using in their curriculum, such as FCM, simulation, and a CBC. However, these strategies do not comprise radical reform. FCM and simulation are active learning strategies, not a curriculum reform that research has shown increases students’ critical thinking but not NCLEX pass rates. CBC is a new pedagogy for nursing education and has proven to decrease content and improve NCLEX pass rates, but more research is needed before ADN programs should conclude that CBC provides the results recommended by the IOM and the NLN. My personal belief is that the optimum curriculum reform will include a combination of FCM, simulation, and CBC.
Comprehensive curriculum reform requires support and resources. This support should come from the ADN program’s administration in the form of funds for professional development activities, rewards for innovative curriculum designs and teaching strategies, faculty release time, and consultant fees for the implementation of new teaching strategies and curriculum reform. In fact, one of the four recommendations the NLN had for deans/directors and chairpersons was to support faculty workloads that accommodate the time and effort needed to design, implement, and evaluate innovation and reform in schools of nursing. Another recommendation was to reward faculty for pedagogical innovation and inquiry (NLN, 2003). These costs should be included in the ADN budget so that the necessary support is in place for yearly curriculum revision.

One College’s journey to become an exemplary ADN program demonstrates the resource and support needed to increase the NCLEX pass rates. In 2013, the Amarillo College ADN program experienced a significant decrease in the NCLEX pass rate to below 80% (Pullen, 2017). Upon this drop, the Amarillo ADN program conducted a self-study analyzing the entire curriculum to determine factors contributing to the NCLEX pass rate decline and to implement improvement strategies. The program director assembled faculty teams, including the curriculum committee, testing committee, research and program effectiveness committee, and faculty organization team to complete a comprehensive analysis of the program. They looked at admission criteria, curriculum, the NCLEX test plan, and student factors.

Based on their findings they developed four strategies for increasing their NCLEX pass rate. These strategies were updating admission policies, rethinking teaching (which included decreasing student to faculty ratios), increasing testing rigor, and increasing remediation (which included a student NCLEX preparation plan). After implementing these strategies, the NCLEX
pass rate increased to above 90% in 2015. To ensure that they continued to have a 90% pass rate on the NCLEX, the director of nursing education focused on sustained remediation. The director received permission for nurse faculty to serve as tutors as part of their workload. The program also continued with the decreased faculty to student ratio, ongoing professional growth for nurse faculty, and the nursing program committees.

The program self-study and improvement strategies completed by Amarillo College demonstrates the time (two years), and commitment needed to evaluate and revise curriculum. It is also a good example of how a troubled program can become an exemplary program with administrative support. In the case of Amarillo College, this support came in the form of guidance from the program director, financial support from administration, and professional development opportunities for faculty.

Further Research

Several ideas for curriculum revision in ADN programs emerged as a result of my literature review and the data collection and analysis. In the previous section I presented my ideas about creating essentials of ADN education for professional nursing practice and a related toolkit, changing the NCLEX test plan and blueprint to provide faculty with the specific content to be included in the NCLEX questions, and implementing a CBC. Each of these suggestions is an area for future research.

Based on the above information I have developed six research questions that I believe are worthy of further inquiry. These questions are: what QI content and types of assignments should be integrated into ADN curriculum and instruction; which courses should QI content be taught in ADN programs; what changes would faculty like to see made to the NCLEX test plan and
blueprint; what impact has Concept Based Curriculum had on Associate Degree Nursing program outcomes and student learning outcomes; to what degree do ADN programs include QI in their Student Learning Outcomes and or courses; and what is the relationship between the ADN and BSN NCLEX pass rates. Each question needs to be teased out so that research outcomes can provide useful information for specific contexts, educators, administrators, and students.

The first research question is what QI content and types of assignments should be integrated into ADN curriculum and instruction? This type of question could be addressed through a quantitative study of stakeholders such as nurse educators, clinical partners, and NCSBN members. Their opinions would be sought regarding the preparation of ADN students for clinical practice and the QI level at which ADN students should be prepared.

A second research question addresses the courses in ADN programs in which QI content should be taught. This question could be the focus of a randomized experimental study. In such a study, the control ADN programs would not teach QI in any courses. However, other ADN programs would be randomized to one of five groups; teaching QI in the first semester, teaching QI in the second semester, teaching QI in the third semester, teaching QI in the fourth semester, or teaching QI in each semester. This type of study would help nurse educators better understand when QI should be taught to ADN students and may provide insights concerning challenges with each design.

A third question is what changes would faculty like to see made to the NCLEX test plan and blueprint especially as it relates to informing nursing faculty about the distribution of content, disease processes, diagnostic test, and medications. This research question could be addressed through a phenomenological study that uses focus groups to obtain the opinions of
nurse educators. The focus groups could include both ADN and BSN faculty as they are all impacted by understanding the NCLEX expectations for students.

The fourth research question could be addressed using a longitudinal research design. This question is what impact has concept-based curriculum had on the following associate degree nursing programs outcomes; NCLEX pass rate, attrition, graduation rates, and employment rates, and on the following associate degree nursing student learning outcomes; critical thinking, interprofessional collaboration, professionalism, management of care, quality, safety in practice, evidence-based practice, and technology? Such a study could be designed to follow an ADN program before and after implementation of a CBC.

The fifth research question, to what degree do ADN programs include QI in their Student Learning Outcomes and or courses, could be studied using a quantitative design. Such a design would allow the researcher to review documents such as college catalogs and nursing handbooks to determine the prevalence of QI in these documents.

The sixth and final research question would involve a correlational study to determine the relationship between the ADN and BSN NCLEX pass rates. In such a study, the NCLEX pass rates for ADN and BSN graduates could be compared from the first year the pass rates were recorded through the current year to determine the change that has occurred in NCLEX pass rates over the years. Other variables such as changes in NCELEX test design and pass rates could also be studied.

Another area of interest to me is usable resources. ADN faculty do not have enough time to create new case studies, simulations, and other active learning strategies to use in their classes. Hence, faculty need resources that are readily accessible, easy to adapt, and continually updated. The use of open educational resources (OER) in nursing education has the potential to address
this problem. According to Hassall and Lewis (2016), OER includes “digitized materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research.” The benefit to OER is that “rather than spending significant time producing educational materials, often with limited resources, educators can now draw on a significant pool of high-quality, freely available open educational and open access resources that can be found online” (p.77).

Research that explores student and faculty satisfaction with OER for nursing education is needed and can be accomplished through surveying students and faculty who are using OER. Likewise, research is needed that compares Associate Degree Nursing programs outcomes such as NCLEX pass rate, attrition, graduation rates, and employment rates. Additionally, studies are needed that examine Associate Degree Nursing student learning outcomes, such as: critical thinking, inter-professional collaboration, professionalism, management of care, quality, safety in practice, evidence-based practice, and technology for curriculum using OER versus traditional resources is essential. These findings could be pursued through a longitudinal study in which ADN program outcomes are compared before and after implementation of OERs.

Many potential areas of future research were identified based on my research. However, several implications for practice emerged from this research and they are discussed in the next section.

Implications for Practice

When I designed this study, I was focused on exploring ADN faculty perspectives about integrating QI into their curriculum. I was also interested in understanding their thoughts about the push to be innovative with their classroom activities and curriculum design. Finally, I wanted
to know the barriers they believe existed and the resources they needed to help meet this QI directive. However, I gained many additional insights as a result of this research study. In this section I will present my suggestions for ADN programs and the faculty teaching in these programs.

The greatest challenge that faculty identified in the interviews was content overload. This challenge included not having enough time to cover the content. The ADN faculty I interviewed believed that QI was an important topic to cover in their curriculum but wished there was a way to control the content creep that happens when changes in practice occur and content related to those changes gets added to the curriculum without removing existing content. Based on the participants’ suggestions, and review of the literature, I identified several ways to decrease content in ADN programs.

One way to decrease content is to switch the curriculum focus from content to concepts. In a concept-based curriculum (CBC), content is deemphasized, students are engaged in activities to foster critical thinking, and concepts are presented across the lifespan and reinforced throughout the program (Giddens et al., 2008). The concept-based curriculum has shown great promise in creating an interactive learning environment, providing student-centered teaching, and streamlining course content. However, ADN faculty must come together to discuss what concepts would be best for all ADN programs to include in their curriculum. Just as nurse educators expect their students to collaborate with other healthcare members, nurse educators must collaborate with faculty outside their nursing program to design a curriculum that benefits all nursing students.

Those programs that have successfully implemented CBC and have demonstrated improved outcomes (such as increased NCLEX pass rates) should be used as models for all ADN
programs. Or, a standardized curriculum for all ADN programs either nationally or within each state may be more realistic. Texas successfully implemented a statewide CBC for ADN programs in 2013 (Lee & Willson, 2017) and could serve as a model for other states. Nurse faculty have worked in silos for too long. It is time for them to openly discuss and implement a curriculum that will improve outcomes for all future students.

Another way to decrease content in ADN programs is to have a more specific NCLEX test plan for nurse educators to follow. Currently, the test plan groups content into four categories: safe and effective care environment, which includes management of care and safety and infection control; health promotion and maintenance; psychosocial integrity; and physiological integrity which includes, basic care and comfort, pharmacological and parenteral therapies, reduction of risk potential, and physiological adaptation (National Council State Boards of Nursing, 2019). Within each category is a brief description or example of the type of content upon which the questions will be created. This content is constructed from the information obtained in a practice analysis that is completed every three years by the NCSBN.

Although this test plan is helpful in determining the percent of questions that will be devoted to each content category and provides a broad description of the content, many specifics are lacking. Nurse faculty would also benefit from knowing the disease processes, medications, and diagnostic tests that would be used to write the test questions. The NCSBN could obtain this information in the RN practice analysis completed every three years or by using resources that identify the most common diseases, prescribed medications, and diagnostic tests seen in practice. Thus, the test plan released in 2019 would list the most common diseases, the top 100 prescribed medications, and the most common diagnostic tests for 2016, 2017, 2018. If other diseases,
medications, or diagnostic tests are not on this most common list, these topics should be listed as well.

Another implication for practice is to determine if the 60 hours allotted for an associate’s degree provides enough time to prepare ADN students for the NCLEX. In the late 1990s, nursing was more task oriented and more RNs were educated at the ADN level. During this era, ADN students had a higher percent pass rate. However, in recent years more RNs are entering the workforce with a BSN degree and the BSN prepared nurses have a higher NCLEX pass rate. More research needs to be done to determine if the associate degree curriculum provides enough knowledge, information, and training to prepare ADN students for the NCLEX. If not, then a determination needs to be made about how credit hours should be allocated, courses combined, content hours cut, or clinical re-designed to ensure that ADN graduates have the requisite knowledge to pass the NCLEX at the same percent as BSN graduates.

Another research outcome that resonated with me was the lack of advanced training or experience in QI processes among the participants and the confusion that exists between EBP and QI. Most Faculty in ADN programs have little experience in QI and they could benefit from training in this area. Several Lean Six Sigma certifications are available and ADN faculty should be reimbursed and rewarded for completing such certifications. Further, a coalition of ADN faculty should be tasked with creating QI projects, case studies, or simulations that are easy to implement and apply. These QI projects, case studies, and simulations should be an OER for all ADN faculty and students.

An Essentials of Associate Degree Education for Professional Nursing Practice should be created to determine standardized guidelines that will assist ADN faculty in planning curriculum. Faculty who teach in BSN programs have such guidelines but ADN faculty do not.
An *Essentials of Associate Degree Education for Professional Nursing Practice* should include guidelines that describe at what cognitive level QI should be taught and a toolkit should be provided to help ADN faculty design QI assignments.

Finally, support and resources should be provided for ADN faculty to create partnerships with clinical sites. The healthcare organizations that are being used for clinical rotations are actively using QI processes to monitor outcomes, determine areas for improvement, implement QI projects, and evaluate changes. By partnering with clinical sites ADN programs could enlist the help of QI specialists in creating projects or determining the information that should be covered in class. These partnerships could also allow students to participate in the QI process on a nursing unit.

**Final Thoughts**

In 2000, the IOM published the groundbreaking report *To Err Is Human: Building a Safer Health System*. This report not only increased awareness of medical errors and the associated costs but also spurred initiatives to address safety and quality in healthcare. In March 2001, the IOM released a follow-up report, *Crossing the Quality Chasm: A New Health System for the 21st Century*. This report called for a redesign of the entire health system and restructuring of how health professionals are educated. Consequently, in June of 2003, the IOM released the report, *Health Professions Education: A Bridge to Quality*, which proposed a set of five core competencies related to the education of all healthcare. Competency number four, applying QI was the focus of my research.

In 2003, the NLN called for nursing curriculum reform to reduce content and implement innovative teaching strategies. In 2010, the IOM and nursing education leaders called for radical
reform in nursing curriculum. Progress has occurred with innovative nursing pedagogy; however, additional resources, support, and ultimately research are needed to evaluate the outcomes of curriculum change.

In my research, I gained an understanding of ADN faculty beliefs regarding the push to integrate QI into ADN curriculum. Based on my exploration I recommended further research in the following areas; creation of an *Essentials of ADN education for professional nursing practice*, revision of the NCLEX test plan and blueprint that lists the specific content to be included in the NCLEX questions, implementation of a CBC using FCM and simulation as teaching strategies, collaboration between nurse faculty and clinical nurse educators to develop unit-based QI projects, and utilization of OER in nursing education.

I am hopeful that my research findings and recommendations will provide ADN faculty the impetus needed to consider curriculum change that will allow students to be more prepared for transition to practice in the current healthcare environment. Likewise, I hope that ADN faculty will use the information provided in this research to teach ADN students QI principles and help them apply these principles at a basic level.
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APPENDIX A

TIMELINE FOR QUALITY IMPROVEMENT DEVELOPMENT IN HEALTHCARE
## Timeline for Quality Improvement Development in Healthcare

<table>
<thead>
<tr>
<th>Date</th>
<th>Institution</th>
<th>Report</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>IOM</td>
<td><em>To Err is Human: Building a Safer Health System</em></td>
<td>Report the staggering number of medical errors and provide suggestions for improving patient safety.</td>
</tr>
<tr>
<td>2001</td>
<td>IOM</td>
<td><em>Crossing the quality chasm</em></td>
<td>Recommends a sweeping redesign of the American health care system and provides overarching principles for specific direction for policymakers, health care leaders, clinicians, regulators, purchasers, and others.</td>
</tr>
<tr>
<td>2003</td>
<td>IOM</td>
<td><em>Health Professions Education: A Bridge to Quality</em></td>
<td>Proposed a set of five core competencies related to the education of all healthcare professionals</td>
</tr>
<tr>
<td>2003</td>
<td>National League for Nursing</td>
<td><em>Innovation in nursing education: a call to reform</em></td>
<td>Suggested that rather than focusing on adding, changing and updating content, nurse educators must focus on expanding their evidence-based pedagogical repertoire and rethink the very nature of contemporary schooling, teaching, and learning</td>
</tr>
<tr>
<td>2009</td>
<td>IOM and RWJF</td>
<td><em>Carnegie Foundation for Advancement of Teaching National Nursing Education Study: Educating Nurses: A Call for Radical Transformation</em></td>
<td>Called for radical curriculum reform</td>
</tr>
<tr>
<td>2010</td>
<td>IOM</td>
<td><em>The Future of Nursing: Leading Change, Advancing Health</em></td>
<td>Asserts that nursing has a critical contribution in healthcare reform and the demands for a safe, quality, patient-centered, accessible, and affordable healthcare system. Recommends that all nurses obtain higher levels of education so that 80% of the nursing workforce will hold a BSN degree by 2020.</td>
</tr>
<tr>
<td>Date</td>
<td>Institution</td>
<td>Report</td>
<td>Purpose</td>
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| 2010 | Tri-Council (American Association of Colleges of Nursing, American Nurses Association, American Organization of Nurse Executives, and National League for Nursing) | *Educational Advancement of Registered Nurses* | • Nurses should practice to the full extent of their education and training.  
• Nurses should achieve higher levels of education and training through an improved education system that promotes seamless academic progression.  
• Nurses should be full partners, with physicians and other health care professionals, in redesigning health care in the United States.  
• Effective workforce planning and policy making require better data collection and information infrastructure. |
| 2019 | Robert Wood Johnson Foundation | *The Committee on The Future of Nursing 2020-2030* | Examines the lessons learned from the Future of Nursing Campaign for Action, as well as the current state of science and technology to inform their assessment of the capacity of the profession to meet the anticipated health and social care demands from 2020 to 2030. |
APPENDIX B

WRITTEN INFORMED CONSENT
Written Informed Consent

I (please print name) ________________________________ agree to participate in the research project titled Exploring Associate Degree Nurse faculty’s perspectives regarding integration of Quality Improvement concepts using innovative pedagogies into nursing education curriculum, being conducted by Debbie Colver, a doctoral candidate in the Adult and Higher Education program at Northern Illinois University.

I have been informed that the purpose of the study is to explore Associate Degree Nursing (ADN) faculty’s perspectives regarding the integration of QI concepts into nursing curriculum using innovative pedagogies, and to understand the influence this has on how nursing students in community colleges are taught about QI. I understand that if I agree to participate in this study, I will be asked to do the following: 1. Participate in one 60 to 90-minute interview that will take place either in person or by phone at a date and time convenient to me. During the interview, I will be discussing my experience teaching QI concepts and my experience with curriculum innovation. The interview will be recorded and transcribed for research purposes. 2. Provide copies of course syllabi, lesson plans, power points, handbooks, and other materials that document if/how QI concepts are being integrated into the curriculum using innovative pedagogies.

I understand that the transcript from the interview, with personalizing information removed, may be peer reviewed to identify themes to determine agreement. I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact Debbie Colver at dcolver@niu.edu or 224-715-2668 or Dr. Gene Roth at groth@niu.edu or Dr. Laura Johnson at ljohnson@niu.edu.

I understand that if I wish further information regarding my rights as a research subject, I may contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588.

Signature of Subject. I understand that there are no direct benefits to me from my participation in this research. I have been informed that potential risks and/or discomforts I could experience during this study include a discussion of views on teaching.

I understand that all information gathered during this experiment will be kept confidential by only storing original recordings on an encrypted and password-protected storage device with a backup copy stored in a locked file cabinet on the private residence of Debbie Colver. These materials will be maintained for three years before being deleted. In addition, the transcript of the interview will be edited to remove personalizing information and the dissertation will reference interviewees only with a code name without disclosing personalizing information. Finally, original paperwork will be stored within a locked file cabinet at the private residence of Debbie Colver and shredded when no longer needed.

I understand that my consent to participate in this project does not constitute a waiver of any legal rights or redress I might have as a result of my participation, and I acknowledge that I have received a copy of this consent form.
I give my consent for my interview to be audio recorded.

Signature of Subject ________________________________  
Date ___________________
APPENDIX C

INTERVIEW GUIDE
Preinterview script

Thank you for agreeing to participate in my study. The purpose of this study is to explore Associate Degree Nursing (ADN) faculty’s perspectives regarding the integration of QI concepts into nursing curriculum using innovative pedagogies. Using what I learn, I hope to understand the impact this has on how nursing students in community colleges are taught about QI. I believe you will make a significant contribution to my efforts to learn about this topic.

As I mentioned in the initial email and/or phone call, I would like to complete this interview in 60 - 90 minutes. I do not anticipate our interview will pose any risks to you. In order to ensure accurate transcription of what you tell me in our interview, I would like to record our conversation. I will use the recordings and transcriptions to help me capture your feelings and perspective. Portions of the recorded data will be used in my doctoral dissertation, research presentations, or journal articles. All efforts will be made to protect your information and maintain confidentiality to the extent allowed by law. The interviews will be transcribed by a professional transcriber. She/he will not have access to your name or the name of your institution. I will not use your name or the name and/or location of your school in any manuscript resulting from this research.

All of what I have just explained is included on the written form of the consents and the consent form regarding recording. Would you please read both forms? If you agree to participate in my study, would you please fill in the forms and sign and date them?

Self-introduction
Before beginning our interview, let me tell you a little about myself. I am currently completing my doctorate in adult and higher education at Northern Illinois University, and this is part of my doctoral dissertation work. Professionally, I am a full-time associate degree nurse faculty member at the College of Lake County, I have been teaching there for 10 years. I have been a nurse for over 25 years with a focus in medical-surgical nursing, Gastroenterology, and outpatient surgery.

Interview Questions
1. Please tell me about your career as a nurse.
   a. How long have you been a nurse?
   b. What is your work history? In what areas did you work?
   c. What type of work did you do prior to nursing?
   d. When did you begin teaching?
   e. What courses have you taught?
   f. What do you teach now?
   g. Outside of your clinical teaching practice as a nurse in the clinical setting? If so, where?

2. Please tell me about the curriculum in your ADN program.
   a. What is the main focus of the course(s) you currently teach?
b. What theory, concepts, or competencies is your curriculum based upon?
c. How do you feel your curriculum influences your teaching?
d. What, if any innovative strategies have you used in your classes? How about within the program curriculum?

3. How is your curriculum assessed? How does curriculum change occur in your nursing program? How is that process working in your opinion?

4. I am interested in learning what your goals are as a teacher. What do you feel are the most important concepts you impart to your students in the course(s) you teach? What are the main concepts you want your students to remember from their nursing education 5 years from now?

5. I am also very interested in QI and I am wondering what experience you have with this topic.
   a. What experience have you had with this topic in the clinical setting?
   b. What experience have you had with this topic in the educational setting?
   c. At your school do you recall the application of QI in the curriculum? Courses?
   d. Is QI as concept, or teaching students to apply QI currently covered in theory, lab or clinical? (can you give me some examples) If not, I am curious why you believe it is not included.
   e. Do you see quality improvement as something that needs to be included in your course or in your nursing program?
   f. Who do you feel is responsible for educating new nurses about QI?

6. The IOM and QSEN have recommended that application of QI be included in nursing education. What are your thoughts about this recommendation?
   a. What are barriers to integrating QI into the nursing curriculum?
   b. What could help you to facilitate the integration of QI concepts and the application of QI into your program’s curriculum?

7. The IOM and NLN have called for innovation within nursing curriculum through a reduction in content and the use of alternative teaching strategies. What are your thoughts about this recommendation?
   a. What are barriers to innovation in the nursing curriculum?
   b. What could help you to reduce content and use alternative pedagogies in your curriculum?

8. QI is one of the required essentials for BSN education. However, this is not a requirement of ADN programs? What are your thoughts on this?

9. Thinking back to your last advisory committee meeting, what do you recall as their top concerns? Does your advisory committee provide input into your curriculum? If so, what discussions or inputs have you received from the committee members regarding quality improvement?
10. What would you like to tell me that I haven’t already asked?

11. Do you have any questions for me?

Post interview script

Thank you again for taking the time from your busy schedule to talk with me today and help me understand your perspective on the nursing curriculum. My contact information is on the business card I gave you. Please feel free to contact me should you have any more questions or comments about today’s interview. Also, please do not hesitate to let me know if you have any additional thoughts about the questions I asked today. Thank you for participating in this research study.
APPENDIX D

SUMMARY OF THEMES AND SUBTHEMES
<table>
<thead>
<tr>
<th>Theme</th>
<th>Subtheme</th>
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| ADN faculty believe quality improvement is an important topic but there are barriers to integrating QI into curriculum | • QI is a complex topic  
• Few ADN faculty have advanced training or experience in QI  
• Confusion between Evidence-Based Practice and QI |
| ADN faculty are frustrated with continual curriculum change         | • Continual curriculum revision due to changes in practice  
• Continual curriculum revision due to changes in the licensure exam and accreditation  
• Resistance to change  
• Never enough time |
| ADN faculty need proactive support and resources to keep up with change and to implement innovative teaching strategies | • ADN faculty agree that there is a need for innovative teaching strategies  
• ADN faculty need proactive support and resources |