Exploration of Associate Degree Nursing Graduates' Progression to the Baccalaureate in Nursing: Experiences and Predictive Variables

Linda Marie Perfetto

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Applying the post-positivistic framework of Thomas Kuhn, the purpose of this dissertation is to demonstrate and explore the educational advancement of associate degree nurses. Community colleges in the United States make quality and affordable higher education accessible to individuals who may not otherwise pursue it. While these institutions attract diverse and talented learners, community colleges make rewarding and life-altering careers a reality for many. For associate degree nurses, this educational opportunity serves as a strong foundation upon which to build a meaningful career. Increased emphasis on the educational advancement of associate degree nurses began with the 2010 Institute of Medicine report on the future of nursing. In order to reach the national goal recommended in the report that 80% of registered nurses be prepared at the minimum of the baccalaureate by 2020, a paradigm shift representing the acceptance of multiple pathways to the baccalaureate needs to occur. Community college faculty and leadership have consistently encouraged the educational advancement of graduates; however, pathways for associate degree nurses to advance educationally have not always been clear and achievable. This dissertation begins with a description of the experiences of associate degree nurses who have attained a baccalaureate degree, continues with an initial analysis of a database designed to track the rate and frequency of the educational advancement of associate degree nurses, and concludes with an analysis of related demographic and academic variables. Adoption of strategies presented here can assist associate degree programs to become more aware of the educational advancement of graduates. In addition, the collection and analysis of
these data by associate degree programs can demonstrate their commitment to the goal of the profession to reach 80% baccalaureate preparation by 2020, while supporting the sustainability of the associate degree as an entry level to practice as a registered nurse. Increased awareness of the patterns of educational advancement by associate degree nurses can assist related programmatic planning and policy development.
Exploration of Associate Degree Nursing Graduates’ Progression to the Baccalaureate in Nursing: Experiences and Predictive Variables

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BS, Nursing Southern Connecticut State University, 1980

MS, Nursing, University of Connecticut, 1996

A Dissertation
Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy
at the University of Connecticut

2018
ADN TO BSN: EXPERIENCES AND PREDICTIVE VARIABLES

APPROVAL PAGE

Doctor of Philosophy Dissertation

Exploration of Associate Degree Nursing Graduates’ Progression to the Baccalaureate in Nursing: Experiences and Predictive Variables

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Liana Orsolini

University of Connecticut

2018
Acknowledgments

If you treat an individual as he is he will stay as he is, but if you treat him as if he were what he ought to be then he will become what he ought to be and could be.

Johann Van Goethe

My gratitude begins with my dissertation committee, Drs. Tom Van Hoof, E. Carol Polifroni, and Liana Orsolini. As my major advisor, Dr. Van Hoof was an ever-present beacon striving to help me gain more and more command of the written word, enabling me to communicate the important message of my research. Carol P., I am thankful for the strong philosophical foundation you encouraged me to finally see the bright light of. Liana, you were the force that kept me grounded in the important issues that gave me my start. I will be forever grateful for your collective responsiveness to my many drafts, from proposal to dissertation!

I am eternally grateful for the UConn School of Nursing and to all of the wonderful faculty that supported me as I learned the skills of nursing research. Returning to UConn to pursue a PhD in Nursing was meant to be for me. I am thankful for the fine opportunities I had to connect with esteemed peers and colleagues throughout out my years at UConn. I looked forward to every week of class and savored every opportunity to learn and personally connect with those I was so fortunate to be among. The support of the Graduate Writing Center, particularly Chris Wenz, is greatly acknowledged.

My family travelled this journey with me as we continued to live life together celebrating graduations, engagements, marriage, new pets, birthdays, hard work, marathons, promotions and
retirements. We planned weddings, enjoyed vacations, and moved and established one another from home to home. All while I pursued this terminal degree as what they all understand is part of my call to nursing. Thanks to my children Joe and Hope and their life partners Julie and Samantha; to my mother Vivian and my dearly departed father and quiet supporter of everything “academic”; and most of all to my beloved husband and life partner, Pat. I could not have done it without the support and distractions you all provided me! Thanks to my dear friends for sharing my ups and downs, and for just listening to me.

Recognition goes to all of the community college nursing students and graduates who give meaning to my work and make it worth every moment I spend. Overwhelming gratitude is due my colleagues at the Connecticut State Colleges and Universities for sharing my vision to collect and analyze data that demonstrates the impact of the life-changing education of which we are all a pivotal component. Thanks to Oscar Rivera for his tireless work to construct the CT-CCNP Graduate Database, JD Mathewson for his strategic and skillful analysis, Sarah White for her brilliant mind, and most importantly to Dr. Bill Gammell for his foundational research that provided the impetus for this dissertation. Without each of your contributions, none of this would have been possible. Last but not least, thanks to Drs. Paul Susen, Estela Lopez and Jane Gates for their faith in me and for their support of my research and work.

Finally, important acknowledgment goes to the Organization for Associate Degree Nursing (OADN) for their generous support of this research. In addition, the undying support of associate degree students, nurses, programs and community colleges by OADN, provides the unity needed to stay strong amid the challenges we manage every day.
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Dissertation Chapter One

Linda M. Perfetto

University of Connecticut
Introduction

Through the landmark summary report of the 2010 forum on the future of nursing education, the Institute of Medicine (IOM) set a goal that 80% of registered nurses (RNs) in the US will possess, at minimum, a baccalaureate of science in nursing (BSN) (IOM, 2010). Similarly, the more recent Future of Nursing progress report (National Academies of Sciences, Engineering, and Medicine [NAM], 2016) continues this emphasis on BSN preparation but acknowledges the importance of community college nursing programs to the diversity of the profession. The connection between the level of nursing education and patient outcomes is clear (Aiken, Clark, Cheung, Sloane & Silber, 2003; Benner, Sutphen, Leonard, & Day, 2009; IOM, 2010; AACN, 2014); the seminal research linking the quality of care provided in hospitals to the education level of staff nurses highlights the value of baccalaureate nursing preparation (Aiken, Clark, Cheung, Sloane & Silber, 2003).

The 2010 IOM committee made clear, specific recommendations for reform of the system of nursing education that includes multiple pathways to the BSN (IOM). The endorsement of the movement to facilitate academic progression of RNs to the BSN and beyond, moved these recommendations forward (AACN, AACC, ACCT, NLN, NOADN, 2012). Six years later, evidence of the importance of associate degree nursing (ADN) programs as pathways into the profession for underrepresented populations remains (NAM, 2016). Acknowledgement of the importance of practice and academic partnerships at the local, regional, and national level to facilitate 80% BSN by 2020 is clear (IOM, NAM).

Reliable data about the educational preparation of nurses as they enter practice is readily available, while data on the educational advancement of nurses is difficult to access, as state-based offices of nursing workforce do not universally track these data. The National Council of

1 BSN will be used throughout as the default term for a bachelor’s degree earned with a major in nursing from any college or university
State Boards of Nursing (NCSBN) reports the number of candidates who sit for the US National Council Licensure Examination for Registered Nursing (NCLEX-RN) by their level of education each year (Table 1) (NCSBN, 2017). Though it is encouraging that the number of BSN candidates is increasing, just above half (53.7%) of RN candidates graduated with an ADN or a diploma in 2016 (NCSBN, 2012-2017). The level of education of CT’s RN candidates is slightly higher with 53.1% graduating with a baccalaureate or higher in the same year (CT State Board of Examiners for Nursing, 2017); however, the current educational distribution of CT’s RNs is gleaned only from national sample survey data. These data, limited by low and missing responses (Budden, Zhong, Moulton, & Cimiotti, 2013), reveal that 32% of Connecticut’s RNs hold a diploma or an ADN while 55% possess a BSN or higher degree (CT Center for Nursing Workforce, 2017). Comparatively, 49% of RNs throughout the US hold a BSN or higher (Budden, et al., 2013). More thorough data that enable awareness of entry-level education and the frequency and rates of educational advancement among RNs is necessary to target initiatives to reach 80% BSN by 2020 at state and national levels. The strategies presented through this research can assist states and nursing education programs to augment awareness and response to levels of nursing educational advancement.

Since 2008, the Connecticut Community College ADN Nursing Program (CT-CCNP), offered at six Connecticut community colleges, enrolls between 1100 and 1200 students each year (CT-CCNP, 2016a). Graduates of the CT-CCNP comprise more than 60% of CT’s ADN RN candidates each year (CT State Board of Examiners for Nursing, 2013-2017). In an effort to support academic progression, the CT-CCNP has negotiated more than a dozen educational advancement pathways to the BSN (RN–BSN) and higher degrees for graduates (CT-CCNP, 2016b). Prospective and current CT-CCNP students receive information about academic
progression and opportunities through information sessions, nursing education fairs, and academic advisors. Once students complete the ADN program, however, obtaining information from them about their educational advancement is a challenge. Thus, the CT-CCNP has been unaware of the frequency, persistence, or completion of educational advancement programs by graduates beyond anecdotal knowledge and graduate surveys with low response rates.

Some 747 RN-BSN programs are available throughout the US, with 80% offered at least partially online (AACN, 2017). Nationally, enrollment in RN-BSN programs showed close to a three-fold increase between 2003 and 2011, from 31,215 to 89,975, respectively (AACN, 2012). Similarly, the number of ADNs enrolled in RN-BSN programs increased by just under 60% from fall 2010 (77,259) to fall 2014 (130,345) (AACN, 2015). During 2013-2014 alone, enrollments increased by another 10%. After thirteen consecutive years of substantial growth, enrollments appeared to stabilize in 2016 (AACN, 2017). These patterns of enrollment unquestionably reveal the awareness among ADNs of the need to advance their education, while the increase in RN-BSN programs provides opportunity for them to do so.

Nationally, while RN-BSN programs have the second lowest average graduation rate (83%) of all nursing programs in the US (N=1,839), ADN programs (N=1,084) possess the highest rate (91%) (NLN, 2013). The high rate of completion combined with the characteristics of ADN students may speak to their commitment and persistence in pre-licensure education; however, the lower rate of RN-BSN program completion deserves further investigation. Though similar data for CT RN-BSN programs is not readily available, the six CT-CCNP ADN programs collectively possessed an 80.2% completion rate from 2010-2015, inclusive (CT-CCNP, 2016a).

The purpose of this dissertation is to explore the educational advancement of RNs to establish evidence to commence dialogue and examination around the genuine acceptance of
multiple pathways to the BSN by the nursing education community. Applying the post-
positivistic framework of Thomas Kuhn, this examination contributes to a the possibility of a
new paradigm for nursing education that acknowledges various pathways and aids the desired
achievement of increased diversity for the profession (NAM, 2016). Chapters three and four are
based upon the analysis of the CT-CCNP Graduate Database and are presented in accordance
with the requirements of two national, peer reviewed nursing journals. In an effort to preserve
the identity of the state, the programs, their students and faculty, pseudonyms for the CT
Consortium and related objects have been adopted. For example, the CT-CCNP is referred to as
the Northeast Associate Degree Nursing Consortium (NE-ADN) and the CT-CCNP Graduate
Database is referred to as the NE-ADN Graduate Database.

The qualitative examination of the educational experiences of RN-BSN students
illuminates their challenges (Perfetto, 2015) and begins the dissertation. Descriptive data
extracted from a CT-CCNP Graduate Database provides information about the rate of
educational advancement of graduates in addition to institutions they attend. Further data
analysis provides insight into the patterns of educational advancement among different groups of
graduates through stratification by demographic, academic, and other variables. Exploration of
patterns, if present, can guide the development of partnerships and programs that may aid
increased educational advancement to reach 80% BSN by 2020.

This research acknowledges the importance of discourse among scientists to reach
consensus, a hallmark of Thomas Kuhn’s insights into the role of scientific communities (Kuhn,
1996). Kuhn’s framework for understanding change within a discipline is particularly pertinent
to the research problems presented here. Kuhn’s notion of collective intentionality captures the
manner in which members of a scientific community cooperate as they share beliefs, ideas, and
plans to move forward. Paradigms represent the tenets that provide a framework and direction for research among members of a discipline (Kuhn). Revolutionary transitions within a discipline such as nursing education can occur wherein collective intentions evolve to a new paradigm in response to new evidence (Kuhn). Scientific progress captures the differences between the traditions and innovations affecting the discipline and serves to move it forward under a new paradigm (Kuhn).

The IOM report, in part, is based upon research in support of BSN preparation in the context of multiple pathways to enter practice as an RN (IOM, 2010) and represents a crisis akin to what precedes a Kuhnian revolution (Kuhn, 1996). The report brings to light research in support of universal baccalaureate preparation for nurses, while it suggests the possibility of genuine acceptance of multiple pathways to the BSN. Notable dialogue and initiatives have followed since 2010, though genuine acceptance of multiple pathways to the BSN is likely to emerge only through stages that bring to light qualitative and quantitative research as justification. Once established, strengthening these standards through repeated exemplars is essential to move forward the state of the science of nursing education. Eventually, if opposition to multiple pathways is rare or out-of-step, then nursing education will have reached the tipping point for the acceptance of multiple pathways to the BSN. This dissertation represents a contribution to the research justification necessary for a new paradigm for nursing education through the presentation of three manuscripts derived from interrelated research efforts.

**Chapter Two (Manuscript One)**

This metasynthesis assists with the interpretation of qualitative research performed to explore the experience of RNs who return to school to pursue a baccalaureate degree. The foundational review of the literature provides evidence for the need for improvement to make returning to school more appealing and rewarding for RNs (Perfetto, 2015). The work identified seven overarching themes reflecting the words of 324 nurses-participants in the sample of thirteen qualitative studies. Overall, the themes reflect the commitment of RNs to advance to the BSN along with the associated rewards of educational advancement, while they acknowledge the accompanying challenges and the need for guidance from peers and faculty (Perfetto, 2015).

While the seven themes identified through the study assist understanding of the experience, this research demonstrates the need for more responsive RN-BSN program models and examination of their impact. The convenience and accessibility of online RN-BSN programs appears as a pervasive thread throughout the metasynthesis, demonstrating a need for more detailed examination of this educational approach. This inquiry provides evidence to inform academic/practice partnerships toward the development of effective, efficient and meaningful educational pathways that acknowledge the challenges and needs of these professionals.

Chapter Three (Manuscript Two)


Robert Wood Johnson (RWJF)-sponsored Academic Progression in Nursing (APIN) initiatives began to take hold throughout the country following the dissemination of the 2010 IOM report (ANA & OADN, 2015). In 2015, the ANA and the OADN released the Joint Position on Academic Progression to Meet the Needs of the Registered Nurse, The Health Care Consumer and the US Health Care System. This position statement represents a summary of...
progress related to academic progression in nursing that incorporates strategies to transform nursing education in the US (ANA & OADN). Such national initiatives demand attention to progress on the educational advancement of RNs and created the impetus for the construction and analysis of the CT-CCNP Graduate Database. Representing more than 60% of CT’s ADN RN candidates each year, the CT-CCNP Graduate Database embodies a substantial data source to learn about this population, particularly amid the dearth of other statewide data sources for CT.

Manuscript 2 of this dissertation reports on the preliminary analysis of the CT-CCNP Graduate Database through a pilot study. This analysis provides a demographic and academic account of all CT-CCNP graduates (N=2,500) from May 2010 through May 2015. In addition, the study details graduates’ enrollment and completion of advanced education programs by institution based upon data acquired through the National Student Clearinghouse.

The pilot study provides valuable data that have been previously unavailable. These data reveal that more than half of CT-CCNP graduates are engaged in educational advancement, while close to one-third of those engaged have completed a baccalaureate or higher degree. Less than 30% of CT-CCNP graduates remain in CT’s public higher education system, while close to one-third attend a private CT university. Somewhat disheartening for CT is the information that more than 40% of graduates attend institutions outside of the state; this represents a missed opportunity to further educate these nurses who are part of CT’s nursing workforce. Twenty-three percent of graduates attend out of state colleges and universities designated as strictly online. Though the rate of educational advancement is encouraging, this descriptive analysis lacks detail related to patterns and timing of enrollment and their relationship, if any, to demographic and academic variables. While the pilot study reveals the utility of the CT-CCNP
Graduate Database to provide ongoing information about the educational advancement of CT’s ADNs, it evidences the need for additional analysis through the dissertation study.

**Chapter Four (Manuscript Three)**


The outcomes of the pilot study reflected in Manuscript 2 evidence the robust nature of the CT-CCNP Graduate Database and establish additional questions that the dissertation study addresses. The pilot clearly establishes the need to develop a method to measure the commitment of ADN graduates to educational advancement. This study sought to identify and examine relationships between demographic and academic variables and persistence (or lack thereof) with educational advancement.

The dependent or outcome variable, *persistence*, serves as an objective basis for assessing CT-CCNP graduates with respect to their educational advancement. The study quantifies graduates’ persistence with educational advancement using a model based upon the work of Gammell (2008). Quantifying persistence serves to consistently evaluate graduates based upon opportunities for enrollment post ADN, considering time since their graduation.

Beyond comparison of persistence scores alone, in-depth examination within groups stratified by demographic and academic variables sheds light upon patterns of enrollment and shaped this study to answer the questions posed. Similarly, comparison between groups can reveal differences that could target initiatives to support graduates’ enrollment and completion of higher degrees.

**Chapter Five: Concluding Thoughts for Future Direction**
The final chapter of the dissertation serves to redefine the perspective of the researcher in accordance with a Kuhnian worldview (Kuhn, 1977, 1996). The three studies are further synthesized as a body of research that provides direction for practice, education and further research. The exemplary nature of this research to support the sustainability of ADN programs is emphasized in summary.

**Conclusion**

Community colleges address the plight of particular students by creating access to affordable, life-altering education. Together these three chapters attempt to demonstrate how ADN education exists as a nursing education innovation that leads to the BSN and higher degrees and supports 80% BSN by 2020. This research applies Kuhn’s notion of paradigmatic change to nursing education and sets the stage for new patterns and opportunities. This research seeks to provide evidence to sustain the opportunity for diverse men and women to earn an ADN that seamlessly leads to a baccalaureate degree. Together, these studies begin a research agenda that can lead to genuine acceptance of multiple pathways to the BSN and, in turn, represent a true paradigm shift for nursing education.
References


Table 1

*US Candidates Taking National Council for Licensure Examination-Registered Nurse (NCLEX-RN) by Candidate Type 2011-2016*

<table>
<thead>
<tr>
<th>Candidates by Type</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<tr>
<td>Number of ADN Candidates</td>
<td>82,764</td>
<td>84,517</td>
<td>86,772</td>
<td>86,377</td>
<td>84,379</td>
<td>81,653</td>
</tr>
<tr>
<td>Number of BSN Candidates</td>
<td>58,246</td>
<td>62,535</td>
<td>65,406</td>
<td>68,175</td>
<td>70,857</td>
<td>72,637</td>
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<tr>
<td>Number of Diploma Candidates</td>
<td>3,476</td>
<td>3,173</td>
<td>2,840</td>
<td>2,787</td>
<td>2,607</td>
<td>2,745</td>
</tr>
<tr>
<td>Number of Candidates with Invalid or Special Program Codes</td>
<td>97</td>
<td>41</td>
<td>80</td>
<td>33</td>
<td>39</td>
<td>34</td>
</tr>
<tr>
<td>TOTAL Number of RN Candidates</td>
<td>144,583</td>
<td>150,266</td>
<td>155,098</td>
<td>157,372</td>
<td>157,882</td>
<td>157,073</td>
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ADN Candidates as a percentage of total Candidates

<table>
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<th>ADN Candidates as a percentage of total Candidates</th>
<th>57.24%</th>
<th>56.24%</th>
<th>55.95%</th>
<th>54.89%</th>
<th>53.44%</th>
<th>51.98%</th>
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ADN plus Diploma Candidates as a percentage of total Candidates

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<th>59.65%</th>
<th>58.36%</th>
<th>57.78%</th>
<th>56.66%</th>
<th>55.10%</th>
<th>53.73%</th>
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National Council State Boards of Nursing (NCSBN), 2012-2017
Dissertation Chapter Two

Linda M. Perfetto

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Wolters Kluwer Health Copyright Clearance Center has authorized use of the final peer reviewed manuscript published in Nursing Education Perspectives as a component of this dissertation:

Facilitating Educational Advancement of RNs to the Baccalaureate: What Are They Telling Us?

Linda M. Perfetto

doi: 10.5480/13-1161.1

Abstract

AIM This metasynthesis assists in the interpretation of qualitative research performed to explore the experience of registered nurses who return to school to pursue a baccalaureate degree. Understanding these experiences is necessary to achieve the national goal of 80 percent of RNs having BSNs by 2020.

BACKGROUND As few as 21 percent of all RNs prepared at the associate or diploma level earn a baccalaureate degree. Experts believe that enhanced academic-clinical partnerships can result in an improvement.

METHOD Noblit and Hare’s method was followed to increase understanding of the phenomena.

RESULTS Seven overarching themes are presented in the words of the 324 nurses included in the 13 qualitative studies in the sample.

CONCLUSION The experiences of these nurses provide information to inform partnerships for the development of effective, efficient, and meaningful educational pathways that acknowledge the challenges and needs of these professionals.

Educational advancement of associate degree (AD) nursing graduates has been slow (US Department of Health and Human Services, 2010) and appears to lack incentives in some settings (Orsolini-Hain, 2012). Acknowledgment that the nursing educational system needs to alter its current approaches in order to meet the Institute of Medicine goal of 80 percent of registered nurses holding baccalaureate degrees by 2020 is well founded (IOM, 2010). This work brings to light the experiences of nurses who have advanced to BSNs and highlights their challenges and victories. To date, this is the first summation of the experiences of these nurses. Our challenge is to design programs for RNs that reflect their learning needs and lifestyles. In order for these nurses to progress, we need to first hear their voices.

REVIEW OF THE LITERATURE

A review of the literature using the CINAHL and PubMed databases for the period January 2000 through April 2013 was accomplished utilizing the key words and headings Academic Achievement; Education, Nursing, Baccalaureate; Faculty, Nursing; Students, Nursing, Associate; Education, PostRN; Perception; Personal Satisfaction; Reflection; Students, Nursing, Baccalaureate; Learning Methods; Registered Nurses; Nurse Attitudes; Academic Achievement; Nursing, Staff, Hospital; and Associate Degree Nurses. The ProQuest database of dissertations and theses was searched using similar terms for the same timeframe.

The landmark study by Aiken, Clarke, Cheung, Sloane, and Silber in 2003 paved the way to recognition of the need for RNs to be educated at the baccalaureate level or higher. Improving upon the approximately 21 percent national rate (USDHHS, 2010) of earned BSNs among nurses initially educated at the diploma or associate degree level is essential.

Quantitative researchers have assisted in the identification of variables that may support nurses in their quest for educational advancement. Rosa (2009) and Altmann (2012) both found the role of faculty in pre-licensure programs to be influential in the decision to return to school. Rosa’s inquiry revealed that faculty perspectives emphasizing the importance of a recuperative period following AD program completion, linkages created by matriculation agreements among educational institutions, and advising support by the institution positively impacted nurses’ decisions to return to school for a BSN (Rosa).

Associate degree faculty in Rosa’s (2009) study reportedly felt a moral obligation to advise their students to advance educationally
as colleagues within the dynamic profession of nursing. Educational advancement for AD and diploma graduates benefits from the time these nurses have spent on socialization to the profession (Rosa, 2009; Rush, Waldrop, Mitchell, & Dyches, 2005). Socialization may enable the RN-to-BSN student to engage with and benefit from the educational experience at a higher level than is possible for a student who enters the profession with a BSN.

The value and contribution of a BSN to a well-rounded nurse’s practice has been unconditionally accepted. DeBrew (2010) performed a content analysis of data collected from RN-to-BSN graduates and pre-licensure BSN graduates revealing that both groups of nurses are achieving the outcomes intended for liberal education. DeBrew described outcomes of liberal education associated with engagement in courses outside the nursing discipline that are believed to enhance the ability to think critically and effectively, communicate and collaborate with others, appreciate diversity, and, in general, support higher levels of problem solving. The same inquiry affirmed that attaining a BSN makes a difference in the nursing practice and personal lives of both groups.

As advocated and described by Tanner (2010), statewide, seamless models for educational mobility that collaboration among community colleges, universities, and practice settings makes possible are likely to increase the rate of educational advancement of diploma and AD nursing graduates to the baccalaureate and beyond (Niederhauser, MacIntyre, Garner, Teel, & Murray, 2010; Tanner). These same partnerships can increase the relevance of advancement by aligning education with particular patient populations to create more meaningful experiences that are responsive to patient care in context (Orsolini-Hain, 2012).

Evidence revealing the presence of a disincentive for practicing AD nurses to return to school further emphasizes the need for increased academic-clinical partnerships (Altmann, 2012; Orsolini-Hain, 2012). Though Altmann concluded that employers may exert some pressure for educational advancement, they do not appear to have improved their support. In an interpretive phenomenological study, the lack of tangible rewards and the absence of a distinction between the roles of AD and BSN graduates were found to perpetuate a low rate of advancement for nurses (Orsolini-Hain). Nurses in the acute care setting observed that experience, not education, may matter most in determining which nurses are promoted (Altmann; Orsolini-Hain).

Kovner, Brewer, Katigbak, Djukic, and Fatehi (2012) studied factors that predict the completion of advanced education by nurses entering the profession with a baccalaureate or associate degree. They found that AD nurses who are black, single, live in rural areas, work in the intensive care unit, and work on the day shift are more likely to complete a baccalaureate degree. Kovner et al. recognized the need for further research to identify the conditions that facilitate educational advancement and suggested that making a real impact on educational advancement may require the development of policies that create more efficient, attractive pathways to achieving a BSN.

In summary, the research reveals that changes are needed to make returning to school more appealing to and rewarding for RNs (Altmann, 2012). By listening to the stories of nurses who have returned to school, we can learn about their challenges and their victories, gain insight into how they are feeling as they reenter the academic world, and learn what has worked and what hasn’t. Qualitative metasynthesis permits the systematic integration of the results of qualitative research (Sandelowski & Barroso, 2007) in order to increase our understanding of particular phenomena. The National League for Nursing 2012-2015 Research Priorities in Nursing Education identify pertinent systematic reviews and meta-analyses of the literature as one way to increase evidence-based approaches in nursing education (NLN, 2012). This synthesis seeks to emphasize and amplify experiences that can assist in the construction of educational pathways that work for all.

**METHOD**

**Procedure**

In an effort to answer the research question “What is the experience of registered nurses who return to school to earn a baccalaureate degree in nursing?” a search of the published literature and the ProQuest database for dissertations and theses was done as previously described. Thirteen studies were discovered that met the inclusion criteria of being qualitative research (or research including a qualitative component) undertaken and made available between January 2000 and April 2013 and focused on educational advancement from RN to BSN.

**Sample**

The studies that represent the sample for this metasynthesis considered totally distinct groups. Five were unpublished doctoral dissertations (Alonzo, 2009; Diaconis, 2001; Dowell, 2000; Rebar, 2010; Viega, 2004) and eight were published in the nursing literature (Boydstun & Jackson, 2008; Delaney & Piscopo, 2007; Kalman, Wells, & Gavan, 2009; Lillibridge & Fox, 2005; Osterman, Asselin, & Cullen, 2009; Ritchie, Evans, MacNeil & Micsinszki, 2005; Rush et al., 2005; Zuzelo, 2001). Collectively, these studies examined the experiences of 324 RN-to-BSN students ranging in age from 19 to 62 years from all over the United States and Canada (one study). Tables 1 and 2 provide descriptive/demographic and methodological characteristics of the sample.

**Data Analysis**

Noblit and Hare (1988) provide guidance for the synthesis of qualitative research studies addressing a particular phenomenon and name this process reciprocal translation. Metaphors judged able to portray the essence of each study are chosen to enlarge and enrich human discourse. The researcher begins by identifying a phenomenon of interest that has been addressed by qualitative research, determining studies that are pertinent and relevant, reading and rereading the studies to identify key concepts, and then determining whether the studies relate to one another. The final steps involve translating the studies into one
another and expressing their synthesis in writing or other artistic formats.

RESULTS: THEMATIC ANALYSIS

The synthesis of the 13 studies revealed seven overarching themes that expressed the perspectives of the 324 RNs as they progressed through the challenges of returning to school amid the demands of adult life and began to see the impact of advanced education on their nursing practice. (See Figure.)

Theme 1: I Am Ready to Assume Responsibility for This Challenging, Life-Altering Journey

All 13 studies showed that most nurses were enthusiastic, motivated, and committed as they returned to school for their BSNs. They saw further education as a way to continue on the pathway of professional nursing. Many looked to educational advancement to fulfill themselves as nurses and as professionals and to refresh their perspective (Diaconis, 2001; Osterman et al., 2009; Ritchie et al., 2005; Rush et al., 2005; Zuzelo, 2001). Students in Zuzelo’s study related that they were sometimes “in a rut” and that school helped them see the larger world of nursing. Desire for additional professional challenges came through for others (Delaney & Piscopo, 2007; Osterman et al.; Ritchie et al.).

Some nurses had always planned to continue their education and viewed the RN-to-BSN program as the next step (Alonzo, 2009; Kalman et al., 2009; Rush et al., 2005; Zuzelo, 2001). Some had waited for the right time to begin (Alonzo; Kalman et al.), whereas being given the opportunity to participate in a new, conveniently accessible program hastened the readiness of others (Osterman et al., 2009). “The hospital is paying for the vast majority of it . . . [The hospital is] bringing the professors to us. How could you turn down something like that?” (Osterman et al., p. 112). Overall, the positive impact they believed it would have on their practice was their main reason for returning to school.

Theme 2: Please Value What I Bring and Help Me Get Ready

Table 1: Demographic Characteristics of Participants in the Studies Included in the Metasynthesis (N = 324)

<table>
<thead>
<tr>
<th>Author(s)/Year</th>
<th>Sample Size</th>
<th>Age Range (years)</th>
<th>Ethnicity</th>
<th>Gender</th>
<th>Entry-Level Education</th>
<th>RN-to-BSN Program Type Studied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alonzo (2009)</td>
<td>21</td>
<td>19–46 (M = 35)</td>
<td>Caucasian, 17; Hispanic, 2; African American, 2</td>
<td>19 female; 2 male</td>
<td>ADN</td>
<td>Online programs from 1 of 4 universities</td>
</tr>
<tr>
<td>Boylston &amp; Jackson (2008)</td>
<td>10</td>
<td>&gt;25</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Full-time, 48-credit accelerated, 20 months, cohort based</td>
</tr>
<tr>
<td>Delaney &amp; Piscopo (2007)</td>
<td>12</td>
<td>32–52 (M = 46)</td>
<td>11 Caucasian; 1 Not specified</td>
<td>11 female; 1 male</td>
<td>ADN, diploma</td>
<td>Conventional, accelerated, and online</td>
</tr>
<tr>
<td>Diaconis (2001)</td>
<td>7</td>
<td>28–45</td>
<td>6 Caucasian; 1 African/West Indian</td>
<td>Female</td>
<td>Not specified</td>
<td>23 programs; undeclared</td>
</tr>
<tr>
<td>Dowell (2000)</td>
<td>183</td>
<td>20–62 (M = 37.5)</td>
<td>American Indian 0.9%; Asian 4.3%; African American 8.6%; Anglo American 74.2%; Hispanic 12%</td>
<td>88% female; 12% male</td>
<td>Not specified</td>
<td></td>
</tr>
<tr>
<td>Kalman et al. (2009)</td>
<td>11</td>
<td>36–59 (M = 43.5)</td>
<td>Caucasian</td>
<td>Female</td>
<td>7 ADN; 4 diploma</td>
<td>RN-BSN program</td>
</tr>
<tr>
<td>Lillibridge &amp; Fox (2005)</td>
<td>6</td>
<td>32–52 (M = 46)</td>
<td>Not specified</td>
<td>Female</td>
<td>ADN</td>
<td>Traditional, on campus, part-time</td>
</tr>
<tr>
<td>Osterman et al. (2009)</td>
<td>11</td>
<td>40–55</td>
<td>Not Specified</td>
<td>Female</td>
<td>10 ADN; 1 diploma</td>
<td>7 onsite program at hospital; 4 other</td>
</tr>
<tr>
<td>Rebar (2010)</td>
<td>5</td>
<td>24–35 (M = 29)</td>
<td>4 Caucasian; 1 Hispanic;</td>
<td>3 female; 2 male</td>
<td>ADN</td>
<td>Online</td>
</tr>
<tr>
<td>Ritchie et al. (2005)</td>
<td>12</td>
<td>27–50 (M = 37)</td>
<td>Not specified</td>
<td>10 female; 2 male</td>
<td>Diploma</td>
<td>12-month post-RN-BSN program</td>
</tr>
<tr>
<td>Rush et al. (2005)</td>
<td>36</td>
<td>M = 36.19</td>
<td>31 Caucasian; 5 African American</td>
<td>34 female; 2 male</td>
<td>33 ADN; 3 diploma</td>
<td>Distance learning</td>
</tr>
<tr>
<td>Viega (2004)</td>
<td>6</td>
<td>41–50 (M = 46.2)</td>
<td>African descent</td>
<td>Female</td>
<td>4 ADN; 2 diploma</td>
<td>Historically black college/ university</td>
</tr>
<tr>
<td>Zuzelo (2001)</td>
<td>35</td>
<td></td>
<td>Caucasian</td>
<td>Majority</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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All nurses returning to school for their BSNs stated that they wanted to feel like and be treated in ways that demonstrated that their prior education and experience as a nurse were valued. In particular, nurses felt defensive and devalued when they perceived that their unique needs and perspectives were not considered and respected by faculty and staff in the RN-to-BSN program (Alonzo, 2009; Boylston & Jackson, 2008; Delaney & Piscopo, 2007; Diaconis, 2001; Dowell, 2000; Kalman et al., 2009; Lillibridge & Fox, 2005; Ritchie et al., 2005; Zuzelo, 2001).

Diaconis (2001) used the metaphor of the restoration of a house to describe a way to view the process of advancing from RN to BSN. The initial education of the nurse is regarded as the firm foundation upon which the rest is built: “Unlike a complete demolition project or building a house from the ground up, restoration means preserving the elements that are essential to the desired design of the house and building on the foundation already provided. Restoration also means respecting the basic symmetry of the house, keeping the esthetic balance visible” (p. 125).

Nurses returning to school were angered by the possibilities that they might need to take courses over and that components of their prior education might not be accepted for college credit. Many cited acceptance of previously earned credits as being an important factor in their selection of an RN-to-BSN program (Alonzo, 2009; Boylston & Jackson, 2008; Delaney & Piscopo, 2007; Diaconis, 2001; Dowell, 2000; Osterman et al., 2009).
Making the transition smoother by understanding the unique characteristics of this student population resonated in all 13 studies. The nurses wanted to be acknowledged for their unique needs as students who, while very comfortable with nursing care, had been away from the academic environment for some time and were in need of support with writing, computer skills, and contemporary approaches to teaching and learning. Their preference for personalized plans of study that acknowledged prior academic work and experience (Osterman et al., 2009) and were balanced with their common needs as a group appeared over and over again (Alonzo, 2009; Boylston & Jackson, 2008; Diaconis, 2001; Kalman et al., 2009; LillibrIDGE & Fox, 2005; Osterman et al., 2009). The following quote expresses this well: “We are all singing out of the same book but are on different pages. We all have a common goal and have gone down many different paths to get where we are now” (Rush et al., 2005, p. 286).

Theme 3: Though This Is Part of My Plan, It May Create Feelings That I Might Not Be Ready For
Nurses returning to school for their BSNs were often overwhelmed; the journey, with its many ups and downs, required dedication and commitment. Many analogies were made: “Like running a long distance race. There are hills, there are down phases, there are moments of exhilaration, but mostly it has been a decision and an act of my will requiring perseverance” (Alonzo, 2009, pp. 86-87). Particular challenges, such as writing and the mastery of computer skills, produced anxiety (Alonzo; Delaney & Piscopo, 2007; Diaconis, 2001; Rebar, 2010; Zuzelo, 2001). Everything that felt comfortable and safe was gone with the initial shock of reentry into the academic world, and adjusting to the role of student was difficult (Diaconis, 2001; Viega, 2004). Nurses’ preference for the familiar approaches to teaching and learning that had been used during their prior educational experiences increased their discomfort with the student role (Viega), though many who had no experience with online RN-to-BSN programs chose to embrace their perceived convenience (Alonzo, 2009; Rebar, 2010; Rush et al., 2005). A lack of comfort with writing scholarly papers produced an Imposter Syndrome (Diaconis, 2001), or a feeling of not being worthy of the student role. For some this feeling was associated with a fear they would be unable to keep up with the demands of the program.

Experiencing a flurry of emotions, sometimes connected with the need to miss out on family activities or to a fear of not being able to keep up with the demands of school, was universal (Alonzo, 2009; Boylston & Jackson, 2008; Diaconis, 2001; Kalman et al., 2009). “It’s hard to balance family [and schoolwork], and family comes first. With families competing for their time, students found that they were stuck in the middle — wedged between family, home, work, and school responsibilities. . . . The demands of all roles . . . add complexity and stress to the RN-to-BSN students’ lives” (Boylston & Jackson, p. 291).
RN-to-BSN students are “high achievers” (Ritchie et al., 2005); academic challenges and “less than perfect” performance are often difficult for them to handle, as revealed by one student’s reaction: “First when I got the ‘C’ I heard that that was a good grade in that course and not to panic . . . . I just kind of pretended it didn’t happen. I was a little angry at myself [because I felt] I should have done better” (Kalman et al., 2009, p. 14).

Students frequently spoke negatively about their initial experiences, but reported feeling more positive as time passed (Delaney & Piscopo, 2007; Lillibridge & Fox, 2005; Osterman et al., 2009; Rebar, 2010). Their shifting perspectives as a result of the educational experience seemed to surprise the nurses: “In course after course, we learned about history [and] research, and we learned where we came from. It was more than a knowledge base, it is a feeling. I could see a transition. Even everyday practice I saw in a different light. . . . It was as if I was fed Miracle-Gro” (Delaney & Piscopo, p. 171).

Insecurity about their ability to be successful was clearly communicated by the adjectives some nurses used to describe the courses, such as “hard,” “intense,” “inhumane,” and “heavy” (Ritchie et al., 2005, p. 5). Yet others were excited by their ability to embrace learning and be successful and began to redefine their career pathways through education: “Beverly, I remember when you and I started together, we said this was it. No more education when this is done. Now here we both are considering MSN if it is offered online. Now that we have just about achieved this goal we must have another mountain to climb. I really think that is a credit to this program” (Rush et al., 2005, p. 289).

Theme 4: It Has to Fit with My Life

To characterize nurses’ efforts to make the responsibilities of school fit in with the multiple demands of their lives, the studies almost unanimously used the metaphor of “juggling.” Family, school, and work were the three major areas that were juggled, with family most frequently indicated as being the top priority (Boylston & Jackson, 2008; Diaconis, 2001; Dowell, 2000; Kalman et al., 2009; Lillibridge & Fox, 2005; Viega, 2004; Zuzelo, 2001). Diaconis noted that the time it takes to complete a degree is a commodity measured in clock hours away from family and friends: “We lose ourselves as well as time in our everyday existence. Juggling, balancing, and rearranging time, something RN to BS students do in order to return to school, determines a way of being” (p. 157). Many nurses who were also mothers spoke about the strain of juggling both roles.

Others had concerns about elderly parents and the need for other family members to do more than their share: “I don’t get to visit them as much, especially my mother. She doesn’t understand, ‘What do you mean you have to study for a test, why can’t you do that another time?’” (Kalman et al., 2009, p. 14). Feelings of guilt were common among the nurses who were back in school. They felt they were being neglectful, and finding the right balance was in many cases a continual struggle (Kalman et al.; Ritchie et al., 2005; Viega, 2004; Zuzelo, 2001).

Financial and other sacrifices made in order to be back in school, though stressful, were often deemed worthwhile for the pursuit of the degree (Alonzo, 2009; Delaney & Piscopo, 2007; Diaconis, 2001; Rush et al., 2005; Viega, 2004; Zuzelo, 2001). When making the decision to return to school, students commonly mentioned having waited for it to be the right time for their family (Alonzo; Diaconis; Osterman et al., 2009).

Some said that they would rather be in a traditional brick-and-mortar classroom, but had chosen the online venue because of work, family, and other obligations (Alonzo, 2009; Lillibridge & Fox, 2005; Osterman et al., 2009; Rebar, 2010; Rush et al., 2005). One online student related: “I am at home with my kids and available to them and my husband. Everybody wins. I don’t have to disrupt anyone’s routines because I am still at home, but they have learned to leave me alone when I am taking an exam.” (Alonzo, p. 87). Comfort with a traditional classroom setting and the convenience of a program close to home determined the choice for many, although they acknowledged that the requirement to be on campus often presented a barrier to degree completion (Lillibridge & Fox; Osterman et al.; Zuzelo, 2001).

Theme 5: I Don’t Want to Do This Alone

The feeling of camaraderie among nurses who were back in school is a focal point of this theme. In an effort to promote nurses’ return to school for the BSN, one hospital expanded its tuition reimbursement while simultaneously collaborating with a nearby university to offer an on-site degree program (Osterman et al., 2009). A greater camaraderie developed among nurses throughout the hospital as a result of the group engagement in the program. “I found that I met people that I’ve never had a relationship with before, and we developed [relationships]. I really enjoyed speaking with other nurses who were in the course with me because . . . you find out what they’re doing in their department. So, we shared a lot of that stuff, about what everyone else does, and that was great” (Osterman et al., p. 111).

Regardless of the educational setting or venue, relationships with classmates were important to the nurses because they shared similar goals and challenges. Many nurses said that they kept each other going, facilitating one another’s progress, as peers participating in the same program (Alonzo, 2009; Boylston & Jackson, 2008; Delaney & Piscopo, 2007; Diaconis, 2001; Dowell, 2000; Osterman, et. al, 2009; Rebar, 2010; Ritchie et al., 2005; Rush et al., 2005; Zuzelo, 2001). In an online community, trust and a sense of belonging were important, and in many cases they were achieved through group project work (Delaney & Piscopo; Rebar). In a traditional classroom, the support nurses lent to one another during vulnerable times was considered vital: “There was a group of us working on our BSN [degree] together, and one of us was quitting every week. We kept each other going” (Delaney & Piscopo, p. 172).

In Boylston and Jackson’s (2008) follow-up study of students divided into cohorts as part of an accelerated program, “students described support and camaraderie emerging within the cohort. Many expressed that the support they give one another, both emotional and academic, is therapeutic and essential as students navigate through the complexities of
The roles of the nurses as professionals and employees, along with the demands of their additional life roles, created the need for reliance upon the support of their employers in order to complete the RN-to-BSN program. Most nurses noted the importance of having a predictable work schedule and the support of co-workers as pivotal to their success. Further, they were dependent upon financial assistance provided by their employer. One nurse–student related, “I think it’s expensive. I am lucky to have tuition reimbursement...If I were to lose the tuition reimbursement, it would affect my ability to stay in the program” (Boylston & Jackson, 2008, p. 291).

In another study, a nurse spoke of her manager as being extremely supportive: “[S]he always did whatever she had to with the schedule to make it easier for me to go to school. Unbelievable support” (Osterman et al., 2009, p. 111). Unsupportive employers were cited by some as obstacles to pursuing the BSN (Diaconis, 2001; Dowell, 2000; Rush et al., 2005; Viega, 2004), while others reported a lack of co-worker support as an obstacle to completion (Boylston & Jackson, 2008; Delaney & Piscopo, 2007; Lillibrige & Fox, 2005; Zuzelo, 2001). If work became inflexible, some nurses were in a position to change jobs, decrease to part-time hours, and/or take personal or vacation time to facilitate their success in school, though these scenarios were rare (Kalman et al., 2009).

College services that were convenient and accessible, such as registration, advising, and the assistance of a librarian, were appreciated by those who returned to the academic world with limited time at their disposal. In Boylston and Jackson’s (2008) study of nurses in an accelerated program, services such as financial aid and assistance with registration that came to the classroom, on-site book delivery, and seamless online access to library services were noted to have helped adult students conserve their most precious resource, time. In some cases, nurses wished for more guidance about admissions and enrollment (Alonzo, 2009).

Some acknowledged less tangible support as being vital to their success. One group acknowledged that “values of family unity and social support sustained them while negotiating life events and multiple roles” (Viega, 2004, p. 450), while the importance of spirituality as a coping mechanism to moderate stress throughout the RN-to-BSN program was important to others (Boylston & Jackson, 2008; Dowell, 2000; Viega, 2004).

**Theme 7: I Am Growing Personally and Professionally and Beginning to Look at My Work Differently**

It was rewarding for the nurses to begin looking at themselves differently both on a personal and on a professional level. They found themselves managing their time more effectively (Alonzo, 2009; Kalman et al., 2009) as they pressured themselves to do well. As they completed “cornerstone courses” on such topics as research, theory, leadership, and community health (Delaney & Piscopo, 2007, p. 170), they began to see the importance of evidence-based practice and the value of research to practice as key to change (Delaney & Piscopo, 2007; Lillibrige & Fox, 2005 Osterman et al., 2009; Zuzelo, 2001). “I never really gave much thought to how the policies and procedures we have now came about...[I]t comes down to patient care. You use evidence-based practice and [get] the best patient outcomes...Somebody studies it, there were better patient outcomes” (Osterman et al., 2009, p. 113).

The nurses found themselves looking at their work more enthusiastically through a new lens, one now informed by their learning experiences (Delaney & Piscopo, 2007; Diaconis, 2001; Kalman et al., 2009; Lillibrige & Fox, 2005; Osterman et al., 2009; Ritchie et al., 2005; Rush et al., 2005). Their new perspectives left them feeling more fulfilled and having increased confidence and ability to consider a change in career direction; they felt empowered to become what they viewed as better care providers as a result of their transformative experiences (Diaconis, 2001; Dowell, 2000; Rebar, 2010; Ritchie et al., 2005; Rush et al., 2005; Viega, 2004; Zuzelo, 2001).

Nurses in the Ritchie et al. (2005) study felt like better people, better leaders, but not better nurses. One nurse stated, “Knowledge is definitely empowering” (Rush et al., 2005, p. 289); and the feelings of increased assertiveness...
that were described were felt to have affected the ability of nurses to interact more effectively with members of the health care team (Rush et al.). Unanticipated transformation was revealed: “Unexpectedly, RN-BSN students found themselves evolving as professionals along many specific dimensions including increased confidence, seeing the big picture, correction of role misconceptions, redirection of professional goals, and renewed excitement for learning” (Rush et al., p. 288).

**DISCUSSION**

During a time when baccalaureate preparation is valued as the standard of educational preparation for all nurses, the presence of multiple culminating pathways is acknowledged (IOM, 2010). As the United States braces for unprecedented health care challenges, attractive pathways must be constructed to encourage and inspire nurses to advance educationally. To make this important step approachable and applicable to their practice, we must hear the voices of nurses such as the 324 included in this metasynthesis. Preparing RNs to embrace a higher level of practice through a holistic focus on research, leadership, theory, and community affords the freedom to not “teach to the test” and combines the best of the worlds of academe and practice.

This work demonstrates the need for further study and exploration of models that allow the experiences of individual nurses to impact and inform their educational pathways. Models that utilize the collective talents of groups of nurses in supporting the success of individuals deserve further inquiry. Creating pathways that are workable for these ambitious professionals is essential to achieving the IOM (2010) goal of 80 percent of RNs having BSNs by 2020 and matching the NLN’s 2012 to 2015 nursing education research priorities.

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**KEY WORDS**

Academic Progression – Nursing Education – Post-RN Education – Baccalaureate – Metasynthesis

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Dissertation Chapter Three

Linda M. Perfetto

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Chapter Three has been formatted for submission for publication to the peer reviewed journal,

*Teaching and Learning in Nursing*
Exploring the Educational Advancement of

Associate Degree Nurses:

A Pilot Study

Linda M. Perfetto

University of Connecticut
Introduction

In 2010, the Institute of Medicine (IOM) set an ambitious goal that by 2020, 80% of registered nurses (RNs) in the US will possess at minimum, a baccalaureate degree in nursing (BSN\(^1\)) (IOM, 2010). Similarly in 2016, the *Future of Nursing progress report* (National Academies of Sciences, Engineering, and Medicine [NAM], 2016) continued this emphasis on BSN preparation. The 2010 IOM committee made clear, specific recommendations for reform of the system of nursing education that includes multiple pathways to the BSN (IOM). The endorsement of the movement to facilitate academic progression of RNs to the BSN and beyond, moved these recommendations forward (AACN, AACC, ACCT, NLN, NOADN, 2012).

Since the 2010 IOM report, evidence of the importance of associate degree nursing (ADN) programs as pathways into the profession is even stronger (NAM, 2016). Consistent with institutional missions grounded in access to affordable, quality education, community college nursing programs serve underrepresented populations, making them important to the diversity of the profession (NAM, 2016) and to the citizens of the communities they serve. Though it is currently difficult to access, evidence of the educational mobility of ADNs is essential to establish genuine acceptance of multiple pathways to the BSN. Applying the philosophical framework of Thomas Kuhn (1996) and using data from a consortium of public ADN programs in the Northeast US, this research establishes methodology for ADN programs to generate data on the academic progression of graduates to the baccalaureate and beyond. Armed with this evidence, nursing education can move toward a new conceptual direction, or paradigm, that acknowledges multiple pathways to the BSN.

**Presentation of the Research Problem/Background**

**Identification of the Problem**

\(^1\) BSN will be used throughout as the default term for a bachelor’s degree earned with a major in nursing from any college or university
The connection between the level of nursing education and patient outcomes is clear (Aiken, Clark, Cheung, Sloane & Silber, 2003; Benner, Sutphen, Leonard, & Day, 2009; IOM, 2010; AACN, 2014); the initial research linking the quality of care provided in hospitals to the education level of staff nurses highlights the value of baccalaureate nursing preparation (Aiken, et al.). The American Nurses Credentialing Center’s (ANCC) Magnet designation is awarded to health care organizations for nursing excellence (ANCC, 2017); Magnet facilities nationwide boasting an average of 58.6% baccalaureate prepared nurses (ANCC, 2016), are associated with better patient outcomes (Aiken, et al., 2003). In light of this research it is concerning that only 49% of RNs in the US hold a BSN or higher (Budden, Zhong, Moulton, & Cimiotti, 2013).

Data on the educational advancement of nurses is difficult to locate. However, in view of related research and the national goal of 80% BSN by 2020, it is incumbent upon the discipline to devise systematic methods to track the academic progression of ADNs. An awareness of the rates of enrollment and completion of RN-BSN programs and related variables will assist in the identification of approaches to increase, support and enhance educational advancement.

Accordingly, this research seeks to answer the following questions:

**RQ 1:** What is the distribution of academic and demographic variables among Northeast ADN Consortium (NE-ADN) graduates from spring 2010-spring 2015?

**RQ2:** What is the frequency of enrollment in educational advancement programs for NE-ADN graduates from spring 2010-spring 2015?

**RQ3:** What is the frequency of completion of educational advancement programs in nursing for NE-ADN graduates from spring 2010-spring 2015?

**Background**
In addition to information about educational progression of ADNs, an awareness of the educational preparation of nurses as they enter practice is necessary to establish initiatives to reach 80% BSN by 2020. The National Council of State Boards of Nursing (NCSBN) reports the number of candidates who sit for the US National Council Licensure Examination for Registered Nursing (NCLEX-RN) by their level of education each year (see Table 1, NCSBN, 2012-17). Though the number of BSN candidates is on the rise nationally, just above half (53.7%) of RN candidates in 2016 graduated with an ADN or a diploma (NCSBN). Though some states mirror the national picture, it is clear the national data reflect an “average” that may not be the norm for most states. In line with NCSBN data, the level of education of the subject-state’s RN candidates is slightly higher, with 47% graduating with an ADN or diploma in the same year (State Board of Examiners for Nursing, 2017). California, similar to this state, reported 50.7% of RN candidates graduated with an ADN in 2016 (California Board of Nursing, 2016). Conversely, data made available by the Florida Center for Nursing revealed a consistent upward trend in the number of ADN candidates between 2007 (at 68%) and 2013 (at 78%) (Florida Center for Nursing, 2014). Similar to Florida, current reports from New Jersey reveal that 62.7% of all new graduates are prepared at the ADN (48.2%) or Diploma (14.5%) level (New Jersey Collaborating Center for Nursing, 2016). Preparing far fewer ADN candidates each year, North Dakota reports 17% of RN candidates graduated with an ADN in 2016 (North Dakota Board of Nursing, 2016). Similar data about individual states are typically found on their state board of nursing website accessible through the NCSBN website (https://www.ncsbn.org).

An increase in RN-BSN programs has occurred in recent years; at last count, there were 747 programs throughout the US (AACN, 2017). Six hundred (80%) of these programs are offered at least partially online, as compared to 59% using online teaching modalities in 2015.
The number of RNs enrolled in RN-BSN programs increased by just under 60% between fall 2010 (77,259) and fall 2014 (130,345), and by 10% during 2013-2014 alone (AACN, 2015). Appearing to stabilize, the year 2016 marked the 13th consecutive year of growth by another 1% increase in RN-BSN program enrollment (AACN, 2017).

Of all nursing programs in the US however, RN-BSN programs have the second lowest average graduation rate (83%) while associate degree (ADN) programs possess the highest (91%) (NLN, 2012). The high rate of ADN program completion may speak to the commitment and persistence of these adult students, however the lower rate of RN-BSN program completion by these same students warrants further investigation. Though there appears to be adequate capacity in RN to BSN programs, if these programs are not meeting the needs of working RNs, for example, redundant educational requirements, unrealistic class schedules and lack of acknowledgment of prior education/work experience (Perfetto, 2015), completion rates may not keep pace with enrollment. Research and related literature suggest that RN to BSN programs may need to alter approaches to aid the achievement of 80% BSN by 2020 (ANA & OADN, 2015; IOM 2010; Perfetto, 2015). Recent efforts to streamline RN-BSN programs to support student progress, have led to the development of strong and efficient educational pathways in some areas of the country (Close, Gorski, Scrozynski, Farmer & Wartok, 2015). An increased awareness of program attributes that are associated with completion might support improvements that address the needs of this unique student population.

The State’s Picture

The NE-ADN, a consortium of six public colleges that offer the ADN, graduates greater than 60% of the state’s ADN RN candidates each year (State Board of Examiners for Nursing, 2013-2017). Thus, graduates of the NE-ADN representing close to two-thirds of all ADN
candidates in the state, comprise a substantial data source to learn about the educational advancement of the state’s ADNs. National sample survey data reveal that 32% of the state’s population of RNs holds a diploma or an ADN while 55% possess a BSN or higher degree (State Center for Nursing Workforce, 2017). Beyond these data that are limited by low and missing responses (Budden, et al.), the educational distribution of the state’s RNs is uncertain. Examination of the academic progression of NE-ADN graduates can inform state and national planning to reach 80% BSN by 2020.

As a steward for educational advancement of graduates, the NE-ADN is committed to research that establishes clear measures of progression. In an effort to guide graduates to progress academically, since 2009 the NE-ADN has eagerly negotiated more than a dozen educational advancement pathways for graduates to the BSN (RN–BSN) and higher (NE-ADN, 2016). Prospective and current NE-ADN students receive information about educational advancement through information sessions, nursing education fairs, and academic advisors. Proactive advising practices, shown to work with non-traditional college students (Kalinowski, 2016), are in place to assist prospective and current students, as well as graduates, with planning for educational advancement based upon their unique academic histories (NE-ADN). Once students complete the ADN program, however, obtaining information from them about their educational advancement is a challenge. Prior to this research, the NE-ADN has been unaware of the rate of educational advancement of graduates beyond anecdotal knowledge and graduate surveys with low response rates.

This article reports on an initial pilot analysis of the *NE-ADN Graduate Database* (CSCU, 2016) constructed to track graduates’ engagement in educational advancement. In addition to providing a description of NE-ADN graduates, this data analysis provides
information about their academic progression. This study offers a valid, reliable and replicable method for ADN programs to establish the frequency and rate of the educational advancement of graduates. Moreover, this research represents a contribution to the body of evidence for a new paradigm of nursing education that genuinely incorporates multiple pathways to the BSN.

**Methods**

**Building the Database**

In an effort to address the lack of information available about NE-ADN ADN educational progression, collaboration between NE-ADN system leadership and the system’s Office of Research and System Effectiveness (ORSE) commenced in 2016. This partnership culminated in the construction of the NE-ADN Graduate Database that provides access to accurate data and substantial opportunity to address inquiries related to the educational advancement of NE-ADN graduates. The system’s Banner Student Information System (Version 8.6, Ellucian Co., 2018) and the National Student Clearinghouse Research Center (NSC) serve as valid and reliable sources for data incorporated into the longitudinal NE-ADN Graduate Database comprised of 2,500 NE-ADN graduates from spring 2010-spring 2015.

Graduate demographics, (NE-ADN College attended, date of graduation from NE-ADN, age upon graduation from NE-ADN, race/ethnicity, gender, and Pell grant recipient as NE-ADN student) a component of the NE-ADN Graduate Database, are gleaned from the system’s Banner (Ellucian Co.) student information system (SIS). Voluntary student surveys serve as the source for data related to race and ethnicity in accordance with federal standards put forth by the Integrated Postsecondary Education Data System (IPEDS) (NCES, 2016). Limitations related to IPEDS standards for race and ethnicity are the voluntary nature of student disclosure and the lack of categorization of non-US Citizens.
Banner also provides academic variables (final/graduation GPA in the NE-ADN, status as an LPN prior to graduation from the NE-ADN, and degree earned prior to enrollment in NE-ADN) into the *NE-ADN Graduate Database*. The NSC provides educational enrollment and completion data about NE-ADN graduates through the participation of greater than 3,600 member colleges and universities (NSC, 2017). NSC institutions reflect enrollment of greater than 98% of all students in public and private US institutions (NSC, 2017). The *NE-ADN Graduate Database* tracks the educational advancement of graduates through June 2016, using NSC data.

The establishment of the *NE-ADN Graduate Database* enables assessment and analysis of the educational advancement patterns of NE-ADN graduates, in the context of demographic and academic variables. Consistent with IRB approval requirements and best practices, the system’s ORSE rendered the *NE-ADN Graduate Database* anonymous prior to any examination by the researcher. The database was “cleaned” and checked for missing and/or erroneous data across all variables using Microsoft Excel 13 (Microsoft Office Professional Plus). This report has been constructed to provide additional protection for the anonymity of NE-ADN graduates.

**Data Analysis**

In order to answer RQ1, descriptive statistics were calculated using SPSS (IBM SPSS Statistics, Version 23). The demographic and academic variables were determined across the entire dataset. Enrollment in advanced education following completion of the ADN was determined using SPSS (IBM SPSS Statistics, Version 23) to answer RQ 2. Using SPSS, completion of a baccalaureate or higher degree program was then determined for those graduates who had enrolled, corresponding to RQ3.

**Results**
Figure 1 is a compilation of data that describes NE-ADN graduates with respect to demographic and academic variables in the dataset to answer RQ1. Race/ethnicity of 10.5% of graduates is unknown and 1.3% of graduates are classified as non-US Citizens. Close to 66% of NE-ADN graduates report as White, mirroring the state’s population that is 67.7% White (US Census Bureau, 2016). Hispanic/Latino graduates comprise almost 10% and fall behind the state’s Hispanic/Latino population by 5.7 % (US Census Bureau, 2016). Graduates reporting to be African American represent just under 8% as compared to 11.8% of the state’s citizens (US Census Bureau, 2016).

Noteworthy is that NE-ADN programs are adding to the diversity of the state’s nurses who are 4% African American, 3% Hispanic/Latino and 86% White (State Center for Nursing Workforce, 2016). Table 2 compares the entire student population in the state’s programs preparing RN candidates in 2014 with NE-ADN graduates in the same year, with respect to the race/ethnicity categories of African American, Hispanic/Latino, and White. NE-ADN graduates mirror these proportions, evidencing their essential contribution to these categories. Detailed data enabling the comparison of the race/ethnicity of NE-ADN graduates with graduates from all of the state’s nursing programs are currently unavailable. However, the state’s Center for Nursing Workforce (CCNW, 2016) reported that the state’s ADN graduates increased in diversity by 4% from 2014-2015 while the diversity of the state’s BSN graduates decreased by 6% during the same time period. These data support NAM conclusions that ADN programs are essential to increase the diversity of the nursing profession (NAM, 2016).

Close to half of all graduates in the dataset (43.9%) received a Pell grant while a NE-ADN student. Pell Grants represent a component of the US federal financial aid program awarded to undergraduate students who meet specific standards for financial need (US
A limitation of applying this variable as a single measure of socio-economic status, rests in the fact that greater than one quarter of the graduates did not apply for federal financial aid while a student. Despite this limitation, however, close to two-thirds of all graduates who did apply for federal financial aid represent the neediest of all applicants, evidencing the importance of the NE-ADN as a pathway into the profession for this segment of the state’s population. This serves as further evidence of the vital role of community colleges to provide access to life changing educational opportunities for the students they serve.

Over 68% of NE-ADN graduates finish the program with a cumulative GPA over 3.0, while 20% of this group earns a GPA between 3.51 and 3.95. The age of greater than half of NE-ADN graduates lies between 25-36 years and less than one-third have earned a prior college degree. Though these descriptors demand further analysis to determine any relationships with educational advancement, they speak to the persistence of community college students who commit to excellence in academic performance as mature young adults.

Table 3 delineates the number of NE-ADN graduates from 2010-2015 by semester and provides perspective to interpret data presented about the educational advancement of graduates. It is important to note that the current analysis does not align educational advancement of graduates with their date of completion of the ADN, as more in-depth statistical analysis is required to determine this level of detail. Though obvious, it is important to remember when viewing the data, however, that those who completed the ADN in 2010 have had far more opportunity to complete a baccalaureate or higher degree than those who completed the ADN in 2015.
A visual schematic of NE-ADN graduates from spring 2010 through spring 2015, with respect to enrollment and completion of baccalaureate or higher degree programs after earning the ADN, is depicted in Figure 2. As of spring 2016, of the 2,500 total graduates, 1,340 (53.6%) enrolled in a baccalaureate or higher degree programs following completion of the ADN. Of these 1,340 graduates, 360 (26.9%) completed a program. Nine hundred eighty graduates (73.1%) had enrolled at a college or university for at least one semester following completion of the ADN, but had not yet completed a program. Again, it is vital to note that these data do not address when the ADN was completed, which is anytime between 2010 and 2015 (see Table 3 for distribution of number of graduates from 2010-2015). Though it was beyond the scope of this investigation, it is reasonable to assume that rates of enrollment and completion of baccalaureate or higher degree would increase as time from completion of the ADN increases.

Evidence exists that prior to the more recent emphasis on BSN preparation for ADNs, most ADNs engaged in educational advancement to the BSN as a “stepping stone” to reach career goals requiring a masters or higher degree in nursing (Spencer, 2008). Others described the BSN as a way to enhance one’s professional opportunities beyond staff nursing (Delaney & Piscopo, 2004; Lillibridge & Fox, 2005; Zuzelo, 2001). For some time, academic progression to the BSN has been promoted to ADN students and graduates by NE-ADN faculty and leadership as essential regardless of one’s future nursing career goals. Table 4 details degrees earned by college/university attended post ADN. According to the NSC, over 83% of NE-ADN graduates who have earned a higher degree have earned a BSN, while just over 6% have earned a master’s degree in nursing, evidence that NE-ADN graduates are acting upon the need to advance to the BSN to enhance their nursing practice.
Close to one quarter of NE-ADN graduates have earned a BSN through a US college or university classified as an online institution. Less than 10% of the degrees earned by NE-ADN graduates came through the NSC with the level of degree unavailable, affirming the value and accuracy of the NSC to track educational advancement of ADNs. Because the NSC data does not differentiate online programs from traditional programs, these data do not reflect the total number of graduates who enroll in or complete online programs. Awareness that more than 80% of RN-BSN programs are offered online (AACN, 2017) combined with these data, however, demonstrates a strong preference by ADNs for the convenience and flexibility afforded by online learning, consistent with recent research (Perfetto, 2015; Perfetto, in press).

The data show that close to 60% of graduates earn their a baccalaureate or higher degree degree from a college or university within the state. However, awareness that close to 3/4ths of graduates earn degrees outside of the public education system from which they earn the ADN, is a concern of administrators desiring to serve students and capture enrollment. Similarly, presentation of this information to stakeholders has enhanced awareness of this population of graduates who are seeking degrees beyond the ADN. Attention to focused marketing and recruitment to attract these prospective students has been a common response to these data. It is reasonable to assume that the low number of graduates earning degrees from colleges and universities geographically far from the state (i.e. a Midwest, Southern or Western US college/university) reflect their relocation after earning the ADN.

Beyond the benefit of increased enrollment for the state’s educational institutions, advancement to the BSN within the context of nursing in the state’s healthcare institutions can directly enable enhancement of healthcare for its citizens. Nursing education experts suggest that state-based academic/clinical partnerships can create opportunities to increase the relevance of
the RN-BSN experience by providing educational experiences tailored to particular patient populations (Niederhauser, MacIntyre, Garner, Teel, and Murray, 2010; Tanner, 2010; Orsolini-Hain, 2012). Further, some suggest that collaboration between community colleges and universities in combination with strong academic/clinical partnerships, are likely to increase the rate of educational advancement of diploma and associate degree nursing graduates to the baccalaureate and beyond (Niederhauser, et al.; Tanner, 2010).

**Discussion**

This investigation represents an initial, critical, primary analysis of the NE-ADN Graduate Database through which its validity and reliability is demonstrated. Presentation of these data throughout the system and the state has been enlightening and supportive of the NE-ADN. These data provide evidence for the need to develop additional opportunities for NE-ADN graduates to advance academically within the state. The research strategy presented here provides a valid and reliable way for ADN program administrators and institutional researchers to acquire evidence of educational advancement of graduates. Similar investigation by ADN programs throughout the US is prudent to support the sustainability of ADN programs as genuinely accepted pathways to the BSN.

**Recommendations for future Research/limitations**

This study raises additional questions for further research. It is evident that a meaningful way to measure educational advancement of ADN graduates that facilitates comparison among them is necessary. An objective method to examine two important facets of educational advancement, time between earning the ADN and enrollment and/or completion of a baccalaureate or higher degree program would be helpful. This study establishes the need for a metric to determine the commitment of ADN graduates to educational advancement.
It would be useful to learn if demographic and academic variables available in the database have any impact upon academic progression. For instance, is greater success in the ADN program associated with academic progression? Do graduates from particular colleges enroll and/or complete RN-BSN programs sooner? When do most ADN graduates commence educational advancement? The development of a predictive model would inform next steps aimed at accelerating the achievement of the BSN for NE-ADN graduates.

Limitations inherent through the NSC relate to a small amount of missing data due to the participation of slightly less than 100% of US colleges and universities. In addition, parameters of institutional participation determine specific data available (NSC, 2017) such as degree earned. One related limitation of the NSC was discovered through this research; the specific degree earned by 9.4% of graduates who completed a degree post ADN was not accessible.

A general limitation of this study relates to the investigation of one associate degree consortium program and its generalizability to others. The number of graduates represented by the NE-ADN Graduate Database is robust as it reflects six public ADN programs, diverse from one another, over six academic years.

**Conclusion**

This investigation brings to light research in support of universal baccalaureate preparation for nurses, while it supports the importance of multiple pathways to the BSN. Genuine acceptance of multiple pathways to the BSN is likely to emerge only through stages that bring to light qualitative and quantitative research as evidence of their effectiveness. Once established, strengthening evidence through repeated exemplars is essential to move the state of the science of nursing education forward to this new paradigm. Eventually, if opposition to
multiple pathways is rare or out-of-step, then nursing education will have reached the tipping point for the genuine acceptance of multiple pathways to the BSN.
References


Institute of Medicine (US) (2010). The Future of Nursing: Focus on Education. Retrieved from


Orsolini-Hain, L. (2012). Mixed messages: Hospital practices that serve as disincentives for associate degree–prepared nurses to return to school. *Nursing Outlook, 60*(2), 81-90. doi: 10.1016/j.outlook.2011.05.007


Table 1

**US Candidates Taking National Council for Licensure Examination-Registered Nurse (NCLEX-RN) by Candidate Type 2011-2016**

<table>
<thead>
<tr>
<th>Candidates by Type</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of ADN Candidates</td>
<td>82,764</td>
<td>84,517</td>
<td>86,772</td>
<td>86,377</td>
<td>84,379</td>
<td>81,653</td>
</tr>
<tr>
<td>Number of BSN Candidates</td>
<td>58,246</td>
<td>62,535</td>
<td>65,406</td>
<td>68,175</td>
<td>70,857</td>
<td>72,637</td>
</tr>
<tr>
<td>Number of Diploma Candidates</td>
<td>3,476</td>
<td>3,173</td>
<td>2,840</td>
<td>2,787</td>
<td>2,607</td>
<td>2,745</td>
</tr>
<tr>
<td>Number of Candidates with Invalid or Special Program Codes</td>
<td>97</td>
<td>41</td>
<td>80</td>
<td>33</td>
<td>39</td>
<td>34</td>
</tr>
<tr>
<td>TOTAL Number of RN Candidates</td>
<td>144,583</td>
<td>150,266</td>
<td>155,098</td>
<td>157,372</td>
<td>157,882</td>
<td>157,073</td>
</tr>
</tbody>
</table>

ADN Candidates as a percentage of total Candidates: 57.24% 56.24% 55.95% 54.89% 53.44% 51.98%

ADN plus Diploma Candidates as a percentage of total Candidates: 59.65% 58.36% 57.78% 56.66% 55.10% 53.73%

National Council State Boards of Nursing (NCSBN), 2012-2017

Table 2: The state's Hispanic/Latino, Black or African American, and White RN students as compared to NE-ADN graduates in the same Race/Ethnicity categories in 2014

<table>
<thead>
<tr>
<th>IPEDS Category</th>
<th>Percentage of Students/Graduates</th>
<th>All RN Students (N=4979)</th>
<th>NE-ADN Graduates (N=467)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic/Latino</td>
<td>9.4</td>
<td>9.85</td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td>10.4</td>
<td>10.7</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>68.8</td>
<td>68.5</td>
<td></td>
</tr>
</tbody>
</table>

Connecticut Center for Nursing Workforce (2016)

Table 3: NE-ADN Aggregate Graduates by semester completing program

<table>
<thead>
<tr>
<th>Semester of Graduation</th>
<th>Number of Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2010</td>
<td>282</td>
</tr>
<tr>
<td>Fall 2010</td>
<td>77</td>
</tr>
<tr>
<td>Spring 2011</td>
<td>319</td>
</tr>
<tr>
<td>Fall 2011</td>
<td>98</td>
</tr>
<tr>
<td>Spring 2012</td>
<td>342</td>
</tr>
<tr>
<td>Fall 2012</td>
<td>95</td>
</tr>
<tr>
<td>Spring 2013</td>
<td>347</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>111</td>
</tr>
<tr>
<td>Spring 2014</td>
<td>345</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>122</td>
</tr>
<tr>
<td>Spring 2015</td>
<td>362</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2500</strong></td>
</tr>
</tbody>
</table>
Table 4

<table>
<thead>
<tr>
<th>COLLEGE/UNIVERSITY AWARDING DEGREE</th>
<th>Bachelor of Science in Nursing (BSN)</th>
<th>Masters Degree in Nursing</th>
<th>Bachelors Degree in another field</th>
<th>Level of Degree Unavailable/Missing*</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-State Public University</td>
<td>92</td>
<td>^</td>
<td>^</td>
<td>0</td>
<td>26.67%</td>
<td>26.67%</td>
</tr>
<tr>
<td>In-State Private College/University</td>
<td>94</td>
<td>17</td>
<td>^</td>
<td>^</td>
<td>32.50%</td>
<td>59.17%</td>
</tr>
<tr>
<td>A Northeast US College/University (Other than In-State)</td>
<td>^</td>
<td>^</td>
<td>^</td>
<td>^</td>
<td>3.61%</td>
<td>62.78%</td>
</tr>
<tr>
<td>A Midwest, Southern or Western US College/University</td>
<td>^</td>
<td>0</td>
<td>^</td>
<td>^</td>
<td>14.44%</td>
<td>77.22%</td>
</tr>
<tr>
<td>A US College/University Classified as Online</td>
<td>74</td>
<td>^</td>
<td>^</td>
<td>^</td>
<td>22.78%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

**Totals by Degree:**

<table>
<thead>
<tr>
<th></th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science in Nursing (BSN)</td>
<td>83.33%</td>
<td>83.33%</td>
</tr>
<tr>
<td>Masters Degree in Nursing</td>
<td>6.11%</td>
<td>89.44%</td>
</tr>
<tr>
<td>Bachelors Degree in another field</td>
<td>1.11%</td>
<td>90.55%</td>
</tr>
<tr>
<td>Level of Degree Unavailable/Missing*</td>
<td>9.44%</td>
<td>100%</td>
</tr>
</tbody>
</table>


*College/University does not provide level of degree awarded to National Student Clearinghouse (NSC)

^Actual number is too few to report in accordance with best practices established by the Institute of Education Sciences of the National Center for Education Statistics (IES, 2010)
### Academic/Demographic Descriptive Statistics: NE-ADN Graduates 2010-2015, Entire Group

<table>
<thead>
<tr>
<th>GPA</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.15-2.5</td>
<td>113</td>
<td>4.5</td>
</tr>
<tr>
<td>2.51-3.0</td>
<td>686</td>
<td>27.4</td>
</tr>
<tr>
<td>3.01-3.5</td>
<td>1369</td>
<td>54.8</td>
</tr>
<tr>
<td>3.51-3.95</td>
<td>332</td>
<td>13.3</td>
</tr>
<tr>
<td>Total</td>
<td>2500</td>
<td>100.0</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>2187</td>
<td>87.5</td>
</tr>
<tr>
<td>Male</td>
<td>313</td>
<td>12.5</td>
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<td>Total</td>
<td>2500</td>
<td>100.0</td>
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</table>

<table>
<thead>
<tr>
<th>Age Completed ADN Program</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-24</td>
<td>369</td>
<td>14.8</td>
</tr>
<tr>
<td>25-30</td>
<td>753</td>
<td>30.1</td>
</tr>
<tr>
<td>31-36</td>
<td>528</td>
<td>21.1</td>
</tr>
<tr>
<td>37-42</td>
<td>399</td>
<td>16.0</td>
</tr>
<tr>
<td>43-48</td>
<td>299</td>
<td>12.0</td>
</tr>
<tr>
<td>49-54</td>
<td>117</td>
<td>4.7</td>
</tr>
<tr>
<td>Total</td>
<td>2500</td>
<td>100.0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Veteran Status</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Veteran</td>
<td>2445</td>
<td>97.8</td>
</tr>
<tr>
<td>Veteran</td>
<td>55</td>
<td>2.2</td>
</tr>
<tr>
<td>Total</td>
<td>2500</td>
<td>100.0</td>
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</table>

<table>
<thead>
<tr>
<th>Pell Grant Recipients</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did Not Receive a Pell Grant</td>
<td>1402</td>
<td>56.1</td>
</tr>
<tr>
<td>Received a Pell Grant</td>
<td>1098</td>
<td>43.9</td>
</tr>
<tr>
<td>Total</td>
<td>2500</td>
<td>100.0</td>
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<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Frequency</th>
<th>%</th>
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<tbody>
<tr>
<td>Non-US Citizen</td>
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<tr>
<td>Hispanic/Latino</td>
<td>238</td>
<td>9.5</td>
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<tr>
<td>American Indian or Alaskan Native or Alaska Native</td>
<td>10</td>
<td>0.4</td>
</tr>
<tr>
<td>African American or Black</td>
<td>197</td>
<td>7.9</td>
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<tr>
<td>Asian</td>
<td>84</td>
<td>3.4</td>
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<tr>
<td>Two or more Races</td>
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<td>1.1</td>
</tr>
<tr>
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<td>263</td>
<td>10.5</td>
</tr>
<tr>
<td>Total</td>
<td>2500</td>
<td>100.0</td>
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*The Integrated Postsecondary Education Data System (IPEDS)
Reference: https://nces.ed.gov/ipeds/

**Figure 1:**

**CT-CCNP FINAL GPA**

<table>
<thead>
<tr>
<th>GPA</th>
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<td>2.15-2.5</td>
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<tr>
<td>2.51-3.0</td>
<td>686</td>
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<tr>
<td>3.01-3.5</td>
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<td>54.8</td>
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<td>3.51-3.95</td>
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**Gender**

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**Race/Ethnicity**

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Frequency</th>
<th>%</th>
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</thead>
<tbody>
<tr>
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<td>33</td>
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<td>10.5</td>
</tr>
<tr>
<td>Total</td>
<td>2500</td>
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**PELL GRANT RECIPIENTS**

<table>
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<tr>
<th>Pell Grant Recipients</th>
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<td>Received a Pell Grant</td>
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<tr>
<td>Total</td>
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**EDUCATION PRIOR TO ADN**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Frequency</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Prior College Degree</td>
<td>779</td>
<td>31.2</td>
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</table>

This table reflects a total of 2500 ADN Graduates from the Northeast Consortium of Associate Degree Nursing (NE-ADN) Program offered at six colleges in the Northeast US.
Figure 2: NE-ADN Graduates Enrollment and Completion of Advanced Education Programs

Northeast AD Nursing Program (NE-ADN) Associate Degree Nursing (ADN) Graduates Spring 2010-Spring 2015 N= 2500

Are NE-ADN Graduates Engaged in Educational Advancement following completion of the ADN?

YES

n = 1340 (53.6%)

Enrolled, but degree not completed
n = 980 (39.2%)

Enrolled & Completed a Baccalaureate or higher degree
n = 360 (26.9%)

Baccalaureate Degree in Nursing
n = 300

Masters Degree in Nursing
n = 22

NO

n = 1160 (46.4%)

Degree earned in an area other than nursing
n = 4

Missing specific degree information
n = 34

Demographic & Academic Data
Chapter Four has been formatted for submission for publication to the peer reviewed *Journal of Nursing Education*
Exploring the Variables Associated with the Educational Advancement of
Associate Degree Nurses:
A Secondary Data Analysis
Linda M. Perfetto
University of Connecticut
Background

In 2010, the Institute of Medicine (IOM) set an ambitious goal that by 2020 80% of registered nurses (RNs) in the US will possess at minimum, a baccalaureate degree in nursing (BSN\(^1\)) (IOM, 2010). Similarly, the more recent *Future of Nursing* progress report supports the emphasis on BSN preparation and acknowledges the importance of community college nursing programs to diversifying the profession (Perfetto, 2018; National Academies of Sciences, Engineering, and Medicine [NAM], 2016), in addition to their providing life-altering educational opportunities to the students whom they serve. In order to meet the IOM goal, commonly referred to as 80% BSN by 2020, the need to reform the nursing education system to include multiple pathways to the BSN was a clear recommendation of the 2010 IOM committee (IOM). In 2012, nursing education leaders collaboratively endorsed the movement to facilitate the academic progression of RNs to the BSN and beyond (AACN, AACC, ACCT, NLN, NOADN, 2012).

Reliable data about the educational preparation of nurses as they enter practice is readily available, but the universal tracking of the educational advancement of nurses is lacking (Perfetto, 2017). A pilot study (Perfetto, 2017) presented a replicable methodology for associate degree (ADN) programs to gather and analyze data on the educational advancement of their graduates. While the pilot study presented encouraging descriptive data, this research goes further to follow the patterns of ADN educational advancement as it may relate to demographic and academic variables. In addition, this research establishes evidence to commence dialogue and examination around the genuine acceptance of multiple pathways to the BSN that promote increased diversity for the profession, and 80% BSN by 2020 as recommended by the IOM (NAM, 2016).
The Research Problem

The 2010 IOM report, in part, is based upon research in support of universal baccalaureate preparation for nurses in the context of multiple pathways to enter practice as an RN (IOM, 2010). The report commenced the examination of two competing paradigms in the profession: exclusive BSN entry and multiple pathways to the BSN. Without evidence to discredit ADN entry into the profession and/or to justify the BSN as exclusive preparation, nursing has not moved toward consensus prior to, or as a consequence of, the report (IOM, 2010). As such, the 2010 report represents a crisis, akin to what precedes a paradigm shift within a discipline (Kuhn, 2016).

Genuine acceptance of multiple pathways to the BSN would represent a paradigm shift for nursing education. Although notable dialogue and initiatives have followed since the 2010 report, such a shift is likely to emerge only through stages that bring to light qualitative and quantitative research as justification, according to Kuhn (1996). Once established, strengthening the evidence through repeated exemplars is essential to advance the state of the science of nursing education (Kuhn). This study contributes to the research justification necessary for a new paradigm for nursing education. Through this examination, the researcher seeks to create a sustainable method to inform stakeholders about the educational advancement patterns of ADN graduates. This study represents a contribution to the body of evidence needed for academic leaders to develop responsive programs to facilitate the academic progression of today’s ADNs.

Research Questions and Hypotheses

The specific purpose of this study is to identify the educational advancement patterns of ADNs using a unique metric, persistence ratio score (PRS), which quantifies their persistence.
Awareness of variables that may influence the PRS can guide programmatic approaches while interventions to maximize facilitators of academic progression can be tested.

**Research Question 1:** Among graduates of the *Northeast Associate Degree Nursing Consortium (NE-ADN)* over a recent five-year period, what is the relationship of academic and demographic factors to persistence in advanced educational programs?

**Hypothesis.** The examination of academic and demographic variables and their relationship to the PRS is exploratory. Based upon these relationships, variables will be identified to perform regression analyses to build predictive models that address Research Questions 2 and 3.

**Research Question 2:** Among graduates of the NE-ADN over a recent five-year period, what demographic and/or academic factors best predict persistence in advanced educational programs?

**Hypotheses.** The definition of persistence for this study, as measured by the *PRS*, considers time since completion of the ADN and enrollment patterns in advanced education. It is hypothesized that higher performing ADNs are more likely to progress beyond the ADN than lower performing ADNs. Similarly, prior academic success (i.e. a prior degree) and/or status as licensed practical nurse (LPN) might also translate into a higher *PRS*. Younger graduates with more years to work in the profession might be more likely to advance. Lower PRSs for graduates who applied for federal financial aid (FFA) in the ADN program could represent efforts to gain financial independence. If high PRSs are identified for graduates who are members of minority groups, this could equate with greater diversity among nurses who possess baccalaureate or higher degrees.
Research Question 3: Among graduates of the NE-ADN over a recent five-year period, what demographic and/or academic factors predict lack of Engagement in Educational Advancement, or a PRS of zero?

Hypotheses. Consistent with hypotheses for Research Question 2, NE-ADN graduates who are older, possess a lower final NE-ADN GPA, and who applied for federal financial aid (FFA) while in the ADN program, might be less likely to have engaged in educational advancement.

As it answers these questions, this research introduces a mechanism for ADN and RN-BSN programs to establish clear evidence of academic progression and related variables. An awareness of related variables can lead to responsive programs that result in increased academic progression. Evidence of increased academic progression can generate support for the genuine acceptance of multiple pathways to the BSN. Applying a post-positivistic framework (Kuhn, 1996), this study contributes to a new paradigm for nursing education.

The Perspective of the Higher Education Community

Alexander Astin’s Inputs-Environments-Outcomes (I-E-O) Model (Astin 2005) serves as a framework for inquiry related to the measurement of success rates for non-traditional students (DiRamio & Jarvis, 2011; Gammell, 2008; Martinez, 2012; Perez, 2014; Tinney, 2012; York, Gibson & Rankin, 2015). Astin describes a variety of student input variables (i.e. demographic and academic) that interact with student environmental variables (i.e. institutional characteristics, curricular requirements, faculty attributes) to impact outcome variables such as retention and graduation rates.

Motivated by the need to integrate diverse patterns of enrollment for non-traditional students into assessment metrics for universities and colleges, Gammell (2008) adopted Astin’s
I-E-O Model to analyze retention of students attending a New England university. This study examined four student enrollment cohorts to determine their input and environmental variables (Gammell). A ratio that considered student enrollment over time was computed as the study outcome variable, persistence. Graduation automatically earned students a score of 1.0, while students amid various stages of enrollment prior to graduation had scores in the range of 0.1-1.0.

Comparison of students across the four enrollment cohorts revealed meaningful differences with respect to the input and environment variables and the outcome variable, persistence (Gammell, 2008). Somewhat unexpectedly, the persistence of the non-traditional Part-Time Transfer students, slightly exceeded their Full-Time, First-Time counterparts (Gammell, 2008), see Table 1. The experiences of these non-traditional college students brought forth by Gammell’s research mirror the patterns of ADN students and graduates who navigate multiple institutions and adopt novel enrollment patterns to attain the ADN and the BSN (NE-ADN, 2016). Due to these similarities, Gammell’s study provided direction for this research.

The NE-ADN as an Exemplar

Since 2008, the NE-ADN, established at six Northeast US community colleges, has enrolled between 1,000 and 1,200 ADN students each year (NE-ADN, 2016a). Graduates of the NE-ADN comprise greater than 60% of the state’s ADN RN candidates each year (State Board of Examiners for Nursing, 2013-2017), and learning about their academic progression can inform planning to reach 80% BSN by 2020. In an effort to support educational advancement of graduates, the NE-ADN has negotiated over a dozen pathways to the BSN (RN–BSN) and higher degrees for graduates (NE-ADN, 2016b). NE-ADN students receive information about academic progression and opportunities through pre-admission information sessions, nursing education fairs, and proactive academic advising practices while in the program.
In response to the 80% BSN by 2020 initiative, the NE-ADN Graduate Database was created in 2016 out of the need for information related to the educational progression of ADN graduates (Perfetto, 2017). A pilot study established the robust nature of the database and promising data on the educational advancement of NE-ADN graduates (Perfetto, 2017). Initial descriptive analysis revealed that 53.6% of all NE-ADN graduates from 2010-2015 are engaged in educational advancement (Perfetto). Of those engaged, more than one quarter have earned a baccalaureate or higher degree, while the balance has enrolled in degree programs or courses, see Figure 1 (Perfetto). Prior to this research, perceptions based on anecdotes and through surveys with low response rates served as the sole sources of data about the frequency, persistence, and completion of education beyond the ADN by graduates.

The NE-ADN Graduate Database represents a valid, reliable, and sustainable source to track the educational advancement of ADN graduates along with variables that may be associated with it (Perfetto, 2017). This study complements the initial descriptive research by providing a measure of graduate persistence with educational advancement using the PRS. In addition, this study attempts to predict Engagement in Educational Advancement and PRS as they relate to demographic and academic variables.

**Method**

**Calculating Graduate Persistence with Academic Progression**

This study quantifies persistence in educational advancement programs using a model based upon the work of Gammell (2008). The PRS consistently evaluates graduates based upon their opportunities for enrollment post ADN, considering time since graduation. A ratio/score, the PRS, considers opportunity to enroll over time and is calculated for each graduate:

\[
\text{Number of semesters enrolled} \quad \frac{\text{Number of semesters eligible or available for enrollment}}{\text{Number of semesters enrolled}}
\]
In this study, graduates who have taken every opportunity to enroll in an educational program after earning the ADN earn a PRS of 1.0, while inconsistent enrollment post-ADN results in a score between 0.0 and 1.0. Graduates who have earned a baccalaureate or higher degree automatically earn a PRS of 1.0 based upon the premise that degree completion is the ultimate form of persistence. An inherent limitation of this methodology is the masking of inconsistent patterns of enrollment among graduates who have earned a baccalaureate or higher degree. For example, a graduate who had a PRS of 0.4 suddenly has a PRS of 1.0 once they complete a baccalaureate or higher degree.

**Statistical Methods Applied**

The predictive models in this study employ either ordinary least squares regression (OLS) (Models 1.1 and 1.2) or binary logistic regression (Models 2.1 and 2.2). The dependent variable (DV) PRS, in Models 1.1 and 1.2, is a continuous variable that ranges from 0 to 1. The DV in Models 2.1 and 2.2, Engagement in Educational Advancement, Yes or No, is binary. Models 1.2 and 2.2 represent the second steps of predictive modeling, as they eliminate the academic variables that lacked significance in predicting the DV in the first steps. The assumption behind the hypothesis that the independent variables (IVs), representing prior academic success and demographic factors, predict either or both DVs, is that the relationship between these variables is linear. These linear relationships espouse that a unit increase in an IV, (or, in the case of dummy variables, an increase from 0 to 1), should predict a consistent, unbiased increase or decrease in the DV. Moreover, the IVs in this study are theoretically and mutually exogenous as they correlate weakly at best (See Table 2). Since the DV Engagement in Educational Advancement is binary (0 or 1), and the assumptions of linearity and exogeneity still apply, the
most appropriate test to measure effects of the IVs on Engagement in Educational Advancement is binary logistic regression (Polit & Beck, 2017).

With the exception of the continuous variables, PRS and *NE-ADN Final Grade Point Average (GPA)*, all variables in the NE-ADN Graduate Database are coded as binary (0 or 1) to facilitate regression analysis (Polit & Beck, 2017). Age brackets were established that each contained close to equivalent numbers of graduates; 22% to 30% populate each of four categories. Similarly, four binary variables corresponding to the Integrated Postsecondary Education Data System (IPEDS) categories for the classification of Race/Ethnicity (R/E) were established that conformed to the sample: Non-US Citizen (C), Citizen/White (C/W), Citizen/Non-White (C/NW) and Citizen/Unknown (C/Ukn). The remaining binary variables conform to commonly accepted standards (i.e. Gender 1=Female; yes=1, no=0).

**Power of the Study**

Established by an *a priori* calculation based on anticipated effect size, field standards of a probability level set at $p = 0.05$, and a desired power level of 0.8, the sample size of 2,500 should be more than sufficient (Faul, Erdfelder, Buchner, & Lang, 2009). If one is searching for a difference of means of at least 0.1 on both DVs, the anticipated effect size is equivalent to 0.20 for the PRS (0.1 divided by the standard deviation of the variable, or 0.499), and 0.25 for the binary variable Engagement in Educational Advancement (0.1 divided by the standard deviation of the variable, or 0.395), then the minimum total sample sizes for both dependent variables should be approximately 400 and 250, respectively, making the total N of 2,500 more than sufficient (Faul, et al.) and establishing the impact of the study.

**Results**
Table 2 presents descriptive statistics related to the sample and presents the academic independent variables followed by the demographic independent variables. The dependent variables provide a sense of the spectrum of engagement and completion of baccalaureate or higher degree programs. The minimum, maximum, and mean values are provided for all variables to provide a sense of the diversity of the NE-ADN graduates studied.

To answer Research Question 1 (RQ1), Table 3 presents the correlation matrix for the sample wherein all IVs representing graduate demographic and academic variables (14) are presented against the binary DV, Engagement in Educational Advancement (yes =1, no=0), and the continuous DV, PRS. It would be unlikely that the attributes represented by the demographic and academic independent variables are related, and examination of the matrix confirms weak correlations among them. Similarly, the matrix reveals the expected strong, positive correlation between the two DVs that represent engagement and level of persistence in education post ADN. Confidence in the accuracy of these coefficients is expressed by the associated p levels (.001-.05) indicated by the number of asterisks following the correlation coefficient.

**Models 1.1 and 1.2**

In response to Research Question 2 (RQ2), two predictive models were derived using OLS. In Model 1.1 (Table 4) the NE-ADN Final GPA positively predicts the PRS to a statistically significant degree. At a significance level of p < 0.001, an increase in the GPA by one grade point predicts an increase in the PRS by .115. This means that a decrease in a graduate’s NE-ADN Final GPA by a full grade point from the mean of 3.14 to 2.14, while holding all other variables constant at 0, reduces the predicted PRS from 0.365 to 0.250 with 95% confidence. In terms of standardized effects, a standard deviation increase in a graduate’s GPA indicates an increase in PRS by .097 standard deviations. These results support the
hypothesis that high performing NE-ADN graduates are more likely to persist academically. Prior degree and LPN status are not statistically significant indicators of the PRS. Thus, these findings reject the hypothesis that a prior degree and/or LPN status translates into greater persistence with educational advancement beyond the ADN.

The model’s goodness of fit statistic of $R^2 = 0.01$ indicates that Model 1.1 explains only about 1% of variation in PRS which means that 99% of the variance in the PRS is explained by other things. Individuals in the sample are de-identified; although the researcher is aware through the pilot analysis that graduates are attending many different programs (Perfetto, 2017) and their academic experiences are unknown and likely vary. The many confounding social variables and competing personal factors may serve to influence ADN educational advancement experiences beyond the variation explained by this model (Perfetto, 2015; Cipher, Mancini & Shrestha, 2017). Model 1.1 establishes the need for further qualitative and quantitative research on ADNs enrolled in RN-BSN programs and demonstrates the utility of the PRS for RN-BSN programs.

Model 1.2 expands upon Model 1.1 to determine the impact of academic and demographic variables on NE-ADN graduate persistence with educational advancement (See Table 4). Accordingly, while Model 1.2 excludes the non-significant academic IVs and includes the additional demographic IVs, GPA remains positively correlated with the PRS at a significance level of $p < 0.001$. Controlling for gender, race and ethnicity, citizenship, military service, age bracket, and financial aid status, an increase in the NE-ADN Final GPA by one grade point predicts an increase in the PRS of .131. This means that reducing a graduate’s final GPA by a full grade point while holding all binary variables constant at zero, would reduce the expected PRS from .358 to .227. Conversely, a standard deviation increase in a graduate’s GPA
indicates an increase in the PRS by .111 when controlling for the aforementioned demographic IVs.

Statistically significant demographic variables include gender, military service, non-US citizenship, age bracket and financial aid status. Identification as a female graduate indicates an increase in the PRS by .051, controlling for all other variables. Holding the other binary variables constant at 0 and GPA constant at 3.141, being female predicts an increase in PRS from .358 to .409. Gender is a statistically significant indicator of the PRS (p < .05).

Self-reporting as a veteran indicates an increase in the PRS by .165. Holding the other binary variables constant at 0 and GPA constant at 3.141, self-reporting as a veteran predicts an increase in the PRS from .359 to .523. Veteran status is a statistically significant indicator of the PRS (p < .01). While this is encouraging for the representation of veterans in the profession, this finding could vary if veteran status was acquired through a method other than self-report.

Graduates who applied for FFA while a student in the NE-ADN demonstrate an increase in PRS by .057. Holding the other binary variables constant at 0 and GPA constant at 3.141, graduates who applied for FFA demonstrate an increase in PRS from .358 to .415. FFA status is a statistically significant positive indicator of the PRS (p < .01), in contrast to the relationship hypothesized.

Binary age bracket variables in Model 1.2 include the 28-32, 33-40 and 41+ year old ADN graduate groupings, meaning that a zero in each category indicates the graduate is a member of the <28 year old group. Each of these dummy variables is statistically significant and negative, with effects ranging from a -.127 to a -.181 difference in the PRS vs. the excluded group. Moving from non-membership to membership in the 28-32, 33-40 and 41+ age groups, while holding all of the other binary variables constant at 0 and GPA constant at the mean of
3.141, predicts a decrease in the PRS from .358 to .231, .187 or .177, respectively (p < .001). Practical significance of these data equates to an awareness of the need to target the 70% of NE-ADN graduates ages 28 and over who may need more encouragement and support to advance. Conversely, targeting the 30% of graduates who are <28 years of age may be unnecessary.

Among the race, ethnicity and citizenship variables, only membership in the non-citizen group was a statistically significant negative indicator. The effect of membership in the non-citizen group was -.140, meaning that being a non-citizen reduces one’s predicted PRS by .14 as compared to a graduate who is a citizen. Holding the other binary variables constant at 0 and GPA constant at 3.141, moving from citizen to non-citizen predicts a decrease in PRS from .358 to .218 (p < .05). As implied above, self-reporting as non-white or unknown race or ethnicity was not a statistically significant indicator of the PRS.

These findings again support the hypotheses for RQs 1 and 2 in that GPA remains a statistically significant and positive indicator of persistence in academic progression when controlling for demographic factors. The findings also support the general research question in that the model shows that demographic variables have a significant influence on ADN graduates’ persistence with educational advancement. The model’s goodness of fit statistic of $R^2 = .067$ indicates that 6.7% of variance in the PRS is explained by this model which continues to confirm that there are many other variables that impact persistence and explain the additional 93.7% of the variance in the persistence of ADNs with academic progression.

**Models 2.1 and 2.2**

Models 2.1 and 2.2 (see Table 5) address RQ3 to explore variables associated with a lack of engagement in educational advancement. Testing the dichotomous variable Engagement in
Educational Advancement, yes or no, against the IVs, binary logistic regression models both Engagement in Educational Advancement and the lack thereof (or a zero PRS).

Model 2.1 demonstrates that the NE-ADN Final GPA significantly and positively predicts Engagement in Educational Advancement (p < .001). An increase in one grade point predicts a graduate would have 1.754 times better odds of Engagement in Educational Advancement following completion of the ADN program, controlling for prior degree and LPN status. In practical terms, the likelihood of engagement in educational advancement for a graduate with an average GPA (3.141) but without either a prior degree or LPN status is 54.8%. Reducing that GPA by a grade point, but holding other variables constant at 0, would reduce the probability of engagement in educational advancement to 40.9%. Prior degree and status as an LPN are not statistically significant predictors of Engagement in Educational Advancement. The model’s goodness of fit statistic of R^2 = 0.01 indicates that Model 2.1 explains about 1% of variation in Engagement in Educational Advancement. The model’s output correctly predicted 55% of the data points in the dependent variable, Engagement in Educational Advancement.

Similar to Models 1.1 and 1.2, Model 2.1 confirms that there are many other variables that impact engagement in educational advancement and persistence and explain the additional 99% of the variance that impacts the academic progression of ADNs (see Table 5).

Model 2.2 does not incorporate prior degree and LPN status due to their lack of statistical significance and like Model 1.2, Model 2.2 brings in demographic variables (see Table 5). One key difference is the omission of veteran status, as it was not statistically significantly correlated with Engagement in Educational Advancement (See Correlation Matrix, Table 3). *NE-ADN Final GPA* remains statistically significant in Model 2.2 at a level of p < .001. GPA’s exponentiated beta coefficient of 1.998 indicates an increase in grade point should yield an
increase in the odds of Engagement in Educational Advancement by a factor of 1.998 when controlling for demographic variables. Practically speaking, moving from the average GPA of 3.141 to a GPA of 2.141 while holding all other variables constant at 0, would result in a decrease in the probability of Engagement in Educational Advancement from 53.7% to 36.8%.

Demographic factors that are statistically significant indicators of Engagement in Educational Advancement are Federal Financial Aid (FFA) status, age, and citizenship. Applying for FFA improves one’s odds of continued engagement by a factor of 1.411. Practically speaking, comparing those who have applied for FFA with those who have not, while holding all binary variables constant at 0 and GPA constant at the mean, applying for FFA increases the likelihood of engagement in educational advancement from 53.7% to 62.1% (p < 0.001). This is consistent with Model 1.2 and is an optimistic result that might elucidate perseverance and motivation amid financial adversity in these ADN students and graduates.

Binary age bracket variables in Model 2.2 are identical to those applied in Model 1.2. Each of these dummy variables is statistically significant within an exponentiated beta of <1, indicating that a 1 in these categories predicts a decrease in probability of Engagement in Educational Advancement. The exponentiated coefficients for the three age groups indicate that for each group the odds of Engagement in Educational Advancement are only .597, .443 and .426 as strong as they would be otherwise, controlling for all else. Practically speaking, holding all other binary variables constant at 0 and GPA constant at the mean, membership in the 28-32, 33-40 and 41+ age groups predicts a decline in the probability of Engagement in Educational Advancement from 53.7% to 41.0%, 34.0% or 33.1%, respectively (p < .001). These results align with model 1.2 and demonstrates the same need for outreach to graduates 28 years and over.
Non-citizenship just meets the standard as a significant but negative indicator of the probability of Engagement in Educational Advancement (p < .05). The exponentiated coefficient for the non-citizenship dummy variable is .453, indicating that membership in this group leaves one’s odds only .453 times as strong as they would be otherwise, controlling for all other variables. Not significant in this model were self-reporting as white, or unknown race/ethnicity, and gender. The findings support the hypotheses that GPA is positively and significantly correlated with engagement in educational advancement, and answer the general research question as to whether academic and demographic factors are important predictors of engagement in educational advancement. The estimated goodness of fit statistic, .057, indicates that 5.7% of variance in the probability of Engagement in Educational Advancement is explained by the model, wherein 94.3% of the variance is explained by other unknown factors. The model’s predictions properly classify 62.1% of the DV’s data points.

Conclusion

Consistent with evidence in the higher education literature (DiRamio & Jarvis, 2011; Gammell, 2008; Martinez, 2012; Perez, 2014; Tinney, 2012; York, Gibson & Rankin, 2015), emergence of the NE-ADN Final GPA as a strong predictor of engagement and persistence in educational advancement informs that prior academic achievement among ADNs may influence their educational advancement later. Consistent with the data analysis presented here, opportunities for students to perceive their own greater success in the ADN program may increase their confidence to approach educational advancement later. This can impact related ADN program practices and policies related to grading and incentives for higher student performance.
The positive relationship between NE-ADN students’ perceived need for financial aid and their academic progression demonstrates perseverance in the face of adversity. These results are supported by recent research related to perseverance demonstrating that motivation combines with self-efficacy to predict student success in higher education (Wolters & Hussain, 2015). Further exploration of these relationships and the ability to build upon them to support academic progression is essential, particularly to reach the 46% of graduates in this study who have not yet engaged in educational advancement. In addition, the value and importance of scholarship funds for RN-BSN students is demonstrated by the level of perceived financial need among these students.

This study demonstrated that engagement and persistence in educational advancement decreases with age. Qualitative research to explore explanations for this phenomenon, beyond the obvious shorter career span for the small percentage of graduates who are much older, might enhance understanding. These data support the notion that with increasing age ADNs begin to lack the requisite self-efficacy to succeed, despite the emphasis on educational advancement that could influence their motivation. Awareness of the feelings, attitudes and beliefs of older ADNs can support creative solutions to maximize contributions and value to the profession through educational advancement may be developed. The strong positive association of engagement in educational advancement and persistence for ADN graduates under 28 years is encouraging. The results support the possible benefit of cohorting diverse age groups of ADNs in RN-BSN programs with the aim of increasing engagement and persistence of older ADNs with educational advancement.

Due to lack of conclusive evidence, this study demonstrates the need for further tracking of relationships between academic progression and race and ethnicity and status as a non-citizen.
Interestingly, non-citizenship as a negative predictor of academic progression could represent emerging issues of immigration and opportunities among non-US citizens. Related to the goal to achieve increased diversity among the ranks of highly educated nurses, this study points to the need to monitor academic progression among nurses from under-represented groups.

Finally, this research brings forth the greater utility and meaning of the PRS for RN-BSN programs that have direct access to these students. A recent study examining persistence in a large, accelerated, online RN-BSN program concluded with the need for an early identification process for at-risk students (Cipher, Mancini & Shrestha, 2017). The capacity to quantify persistence using the PRS metric might help large programs track and assist students who frequently enter and exit. Conversely, ADN programs tracking the PRS of graduates with whom they are no longer connected minimizes the utility for these programs.

The ultimate value of a measure of academic progression for graduates emphasizes the utility of this methodology for ADN programs. As programs gather and analyze similar data, they demonstrate accountability and commitment to their role in reaching 80% BSN by 2020. Increased awareness of the patterns of ADN advancement can guarantee that opportunities for academic progression are meeting the needs and goals of this population of nurses.

The collation of evidence provided by this study and subsequent follow up studies can support progress toward consensus on multiple pathways to the BSN. Consensus can occur as individuals shift their perspectives at variable rates, and for different reasons that reflect their personal judgments and interpretation of available evidence (Kuhn, 1996). Eventually, if opposition to multiple pathways to the BSN is rare or out-of-step, then nursing education will have reached the tipping point for genuine acceptance.
References


Perfetto, L. (2018). Toward Genuine Acceptance of Multiple Pathways to the Baccalaureate in Nursing: Research Supporting a Paradigm Shift for Nursing Education. Retrieved from University of Connecticut Digital Commons, on [date available].


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State Board of Examiners for Nursing, Registered Nurse Educational Programs Statistics Reporting Sheet for 2014 Calendar Year, Retrieved from


State Board of Examiners for Nursing, Registered Nurse Educational Programs Statistics Reporting Sheet for 2015 Calendar Year, Retrieved from
State Board of Examiners for Nursing, Registered Nurse Educational Programs Statistics Reporting Sheet for 2016 Calendar Year, Retrieved from


Table 1:
Means and standard deviations of persistence ratios by student enrollment cohorts in Gammell’s Study

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<td>Transfer</td>
<td>First-time</td>
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<td>.73</td>
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<td></td>
<td>.37*</td>
<td>.36*</td>
<td>.38*</td>
<td>.38*</td>
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*Standard deviations are italicized.
^Adopted from Gammell (2008)

Table 2
NE-ADN Graduates Academic, Demographic & Dependent Variables: Descriptive Statistics, N=2,500

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<thead>
<tr>
<th>Academic Independent Variables (AIV):</th>
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<td>3.141</td>
<td>.007</td>
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<td>Mean</td>
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<tr>
<td>Citizen, non-white (C/NW) (1=member, 0=non-member)</td>
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<td>1.00</td>
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<td>.416</td>
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<tr>
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<td>Age Brackets:</td>
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<td>Mean</td>
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<td>Age Completed ADN &lt;= 27 (1=member, 0=non-member)</td>
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<tr>
<td>Age Completed ADN &gt;=41 (1=member, 0=non-member)</td>
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<td>Dependent Variables (DV):</td>
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<td>Engaged in Education post-ADN (EEA) (0= No, 1 = Yes)</td>
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<td>.010</td>
<td>.499</td>
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*Refers to graduate self-reported data
^Data is organized by the Integrated Postsecondary Education Data System categories
~Standard Error
`Standard Deviation
### Table 3

**Correlation Statistics Among Dependent and Independent Variables**

<table>
<thead>
<tr>
<th>Variables/Corresponding Numbers</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
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<td>1. Persistence Ratio</td>
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<td>-.0051</td>
<td>.0970***</td>
<td>.0590***</td>
<td>.0520***</td>
<td>.0367***</td>
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<tr>
<td>2. Engaged in Education post-ADN</td>
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<td>-.0287</td>
<td>-.0820***</td>
<td>-.0088</td>
<td>-.0890***</td>
<td>.0610**</td>
<td>.0169</td>
<td>.0248</td>
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<tr>
<td>3. Degree Earned prior to ADN</td>
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<td>.0090***</td>
<td>.0850***</td>
<td>.0500***</td>
<td>.0247**</td>
<td>.0373***</td>
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<td></td>
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<tr>
<td>4. LPN prior to ADN</td>
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<td>-.0055</td>
<td>-.0790***</td>
<td>.0387</td>
<td>.0053</td>
<td>.0156</td>
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<tr>
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<td>-.0888</td>
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<td>.0400*</td>
<td>.0091</td>
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<tr>
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<td>-.0860***</td>
<td>.0166</td>
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<td>.0091</td>
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<td>7. Gender</td>
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<td>.0500***</td>
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<td>.0387</td>
<td>.0166</td>
<td>.0860***</td>
<td>.0166</td>
<td>.0400*</td>
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<tr>
<td>8. Veteran</td>
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<td>.0247</td>
<td>.0169</td>
<td>.0053</td>
<td>-.0610*</td>
<td>.0387</td>
<td>.0166</td>
<td>.0400*</td>
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<tr>
<td>9. Citizen, white</td>
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<td>.0091</td>
<td>-.0790***</td>
<td>.0166</td>
<td>.0400*</td>
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<tr>
<td>10. Citizen, not white</td>
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<td>-.0313</td>
<td>.0114</td>
<td>-.0033</td>
<td>.0135</td>
<td>-.0610**</td>
<td>-.0042</td>
<td>.0108</td>
<td>-.0400*</td>
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<tr>
<td>11. Citizen, unknown R/E</td>
<td>.0810***</td>
<td>.0880***</td>
<td>-.0950***</td>
<td>.0570***</td>
<td>-.0237</td>
<td>-.0420*</td>
<td>.0810***</td>
<td>.0166</td>
<td>.0400*</td>
</tr>
<tr>
<td>12. Non-citizen</td>
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<td>-.0820***</td>
<td>-.0630**</td>
<td>.1090***</td>
<td>-.0420*</td>
<td>-.0158</td>
<td>-.0071</td>
<td>-.1610***</td>
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<tr>
<td>13. Age Completed ADN Program</td>
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<td>-.1720***</td>
<td>-.0318</td>
<td>.0720***</td>
<td>.0510*</td>
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<td>.0850***</td>
<td>.0154</td>
<td>-.0470*</td>
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<tr>
<td>14. Age Completed ADN &lt;=27</td>
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<td>.1630***</td>
<td>-.0070</td>
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<td>-.0272</td>
<td>.0059</td>
<td>.0810***</td>
<td>.0510*</td>
<td>.0237</td>
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<tr>
<td>15. Age Completed ADN &gt;=28, &lt;=32</td>
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<td>.0500</td>
<td>-.0039</td>
<td>.0800***</td>
<td>.0021</td>
<td>.0470*</td>
<td>.0276</td>
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<tr>
<td>16. Age Completed ADN &gt;=33, &lt;=40</td>
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<td>-.0850***</td>
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<td>.0211</td>
<td>-.0195</td>
<td>.0016</td>
<td>-.0303</td>
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<td>-.0085</td>
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<td>17. Age Completed ADN &gt;=41</td>
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<td>.0540**</td>
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<td>-.0610**</td>
<td>-.0860**</td>
<td>-.0450*</td>
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</table>

***Correlation is significant at the 0.001 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

---

### Table 3, Continued

**Correlation Statistics Among Dependent and Independent Variables**

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<th>17</th>
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<td>-.0770***</td>
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<td>.1880***</td>
<td>-.0114</td>
<td>-.0860***</td>
<td>-.1060***</td>
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<td>.1630***</td>
<td>.0087</td>
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<td>-.1000***</td>
</tr>
<tr>
<td>3. Degree Earned prior to ADN</td>
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<td>.0740***</td>
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<td>.0237</td>
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<td>-.3600***</td>
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<td>-.3520***</td>
<td>-.2960***</td>
<td>-.3050***</td>
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***Correlation is significant at the 0.001 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).
Table 4

Predictive Models of NE-ADN Graduate Persistence with Educational Advancement

<table>
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<tr>
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<th>Model 1.1</th>
<th>Model 1.2</th>
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<td>$p$</td>
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<td>AIV: Degree Earned prior to ADN</td>
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<td>AIV: GPA</td>
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<td>DIV: Gender</td>
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<tr>
<td>DIV: Veteran</td>
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<td></td>
</tr>
<tr>
<td>DIV: Applied for Federal Aid</td>
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<td></td>
</tr>
<tr>
<td>DIV: Age $\geq$28, $\leq$32</td>
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<td>.000</td>
</tr>
<tr>
<td>DIV: Age $\geq$33, $\leq$40</td>
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<td>.000</td>
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<td>DIV: Age $\geq$41</td>
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<td>.000</td>
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<td>DIV: R/E, Citizen, non-white</td>
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<td>.122</td>
</tr>
<tr>
<td>DIV: R/E, Citizen, unknown R/E</td>
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<td>.362</td>
</tr>
<tr>
<td>DIV: R/E, Non-citizen</td>
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<td>.038</td>
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<tr>
<td>(Constant)</td>
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<td>.952</td>
</tr>
</tbody>
</table>

Notes for Model 1.1: $R^2 = .010$; Adjusted $R^2 = .008$

Notes for Model 1.2: $R^2 = .067$; Adjusted $R^2 = .063$

Abbreviations: AIV=Academic Independent Variable; DIV=Demographic Independent Variable; Age=Age completed NE-ADN GPA=NE-ADN Final GPA; R/E=Self-reported Race/Ethnicity; $B$=Ordinary Least Squares Regression statistic; $p$=level of significance; $\beta$=Standardized Ordinary Least Squares Regression Statistic; CI=confidence interval
### Table 5

**Predictive Models of NE-ADN Graduate Engagement in Educational Advancement (EEA)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 2.1</th>
<th>Model 2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIV: Degree Earned prior to ADN</td>
<td>0.881</td>
<td>1.998</td>
</tr>
<tr>
<td>AIV: LPN prior to ADN</td>
<td>0.890</td>
<td>1.998</td>
</tr>
<tr>
<td>AIV: GPA</td>
<td>1.754</td>
<td>1.754</td>
</tr>
<tr>
<td>DIV: Gender</td>
<td>1.196</td>
<td>1.196</td>
</tr>
<tr>
<td>DIV: Applied for Federal Aid</td>
<td>1.411</td>
<td>1.411</td>
</tr>
<tr>
<td>DIV: Age &gt;=28, &lt;=32</td>
<td>0.597</td>
<td>0.597</td>
</tr>
<tr>
<td>DIV: Age &gt;=33, &lt;=40</td>
<td>0.443</td>
<td>0.443</td>
</tr>
<tr>
<td>DIV: Age &gt;=41</td>
<td>0.426</td>
<td>0.426</td>
</tr>
<tr>
<td>DIV: R/E, Citizen, non-white</td>
<td>0.446</td>
<td>0.446</td>
</tr>
<tr>
<td>DIV: R/E, Citizen, unknown R/E</td>
<td>0.697</td>
<td>0.697</td>
</tr>
<tr>
<td>DIV: R/E, Non-citizen</td>
<td>0.453</td>
<td>0.453</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.208</td>
<td>0.291</td>
</tr>
</tbody>
</table>

Notes for Model 2.1: Cox & Snell $R^2 = .01$; 55.0% classified correct by model

Notes for Model 2.2: Cox & Snell $R^2 = .057$; 62.1% classified correct by model

Abbreviations: AIV=Academic Independent Variable; DIV=Demographic Independent Variable; Age=Age completed NE-ADN GPA=NE-ADN Final GPA; R/E=Self-reported Race/Ethnicity; $e^B$=exponentiated Beta Coefficient, Binary Logistic Regression statistic; p=level of significance; CI=confidence interval
Northeast Associate Degree Nursing Consortium (NE-ADN)
Associate Degree Nursing (ADN) Graduates
Spring 2010-Spring 2015 N= 2,500

Are NE-ADN Graduates Engaged in Educational Advancement following completion of the ADN?

YES

n = 1,340 (53.6%)
Enrolled, but degree not completed
n = 980 (73.1%)

Persistence Ratio Score* = 0.077 - 1.0

Enrolled & Completed a Baccalaureate or higher degree
n = 360 (26.9%)

Persistence Ratio Score* = 1.0

Baccalaureate Degree in Nursing
n = 300

Masters Degree in Nursing
n = 22

NO

n = 1,160 (46.4%)
Persistence Ratio Score* = 0

Missing specific degree information
n = 34

Degree earned in area other than nursing
n = 4

*The persistence ratio score (PRS) is calculated for graduates enrolled in advanced education using the following formula:

\[
\text{PRS} = \frac{\text{#Semesters Enrolled in advanced education since completion of the ADN}}{\text{#Semesters Available for enrollment since completion of the ADN}}
\]

- Graduates who have taken every opportunity to enroll since earning the ADN have a PRS of 1.0.
- Graduates who have earned an advanced degree since completion of the ADN earn a PRS of 1.0.
- Graduates who have not enrolled since earning the ADN have a PRS of zero.

Adapted from Gammell (2008).

Figure 1: Persistence in Advanced Education of NE-ADN Graduates from May 2010 through June 2016
Dissertation Chapter Five

Linda M. Perfetto

University of Connecticut
Concluding Thoughts for Future Direction

A Philosophical Perspective

Consistent with a Kuhnian worldview (Kuhn, 1996), the discipline of nursing is immature as it has yet to come to full consensus upon a paradigm for entry-level education. The 2010 IOM report, however, commenced a contemporary examination of two competing paradigms for the profession: exclusive BSN\(^1\) entry and multiple pathways to the BSN. Genuine acceptance of multiple pathways to the BSN would represent a revolutionary change for the nursing discipline. According to Kuhn, revolutionary changes within disciplines have their beginnings in responses to incongruities that stimulate related research (Kuhn, 1996). Patterns of scientific progress capture the differences between the traditions and innovations affecting a discipline and serve to move it forward under a new framework, or paradigm (Kuhn, 1996). The importance of discourse among members of a discipline to reach consensus is a hallmark of Kuhn’s insights into the role of scientific communities (Kuhn, 1996). Kuhn’s framework for understanding change within a discipline is particularly pertinent to the research problem addressed through this dissertation.

The trajectory of this research had its beginnings with the researcher’s initiation into the profession as a baccalaureate prepared RN possessing a clear bias toward the BSN as the exclusive entry into the profession. No different from other new nurses, the researcher accepted a paradigm for entry-level education based on the authority of the members of the nursing program completed. Kuhn argues that innovation is possible because education within a science begins with a “dogmatic initiation in a pre-established tradition that the student is not equipped to evaluate” (Kuhn, 1977, p. 229). Answering a mid-career call to nursing education, the researcher began working with ADN students, establishing a passion for the mission of the community

\(^{1}\) BSN will be used throughout as the default term for a bachelor’s degree earned with a major in nursing from any college or university
college as a US social institution. The researcher quickly became aware that community colleges address the plight of particular students by creating access to quality, affordable, and life altering education. Full appreciation for the value of the ADN as an entry point to the profession quickly developed because of rich experiences as a faculty member and program director. The combination of a newfound commitment to ADN education and a long-standing pledge to baccalaureate preparation resulted in determination to establish an infrastructure of seamless educational advancement for ADNs, well prior to the 2010 IOM report. In this situation, ADN education represented an innovation related to the researchers’ accepted tradition or paradigm of exclusive BSN entry-level education. This dissertation represents a response to the incongruity of exclusive BSN entry into the profession based upon the strong history of the impact and success of ADN education.

**Establishing a Research Direction**

Current tracking of baccalaureate degrees earned in nursing is confusing. Increasing awareness of this motivated the researcher to establish a strategy to prepare accurate reports on baccalaureate degrees earned by ADNs. As an example, in a leading report it appeared that pre-licensure graduates from BSN programs outnumbered those from ADN programs for the first time in 2011 (Buerhaus et al., 2014). This analysis, using data derived from the Integrated Post-secondary Education System (IPEDS), erroneously counted all baccalaureate degrees earned in nursing (i.e. BSNs) as if they were the initial degree earned in the discipline (Buerhaus et al). Awareness that the NCSBN serves as the accurate and sole source of data on the educational level of RNs as they enter practice is essential. According to the NCSBN, the number of BSN candidates has steadily increased since 2011, while the number of ADN candidates has decreased by 5.9% since 2013 (NCSBN, 2012-2017). Despite this, ADN candidates continue to outnumber
BSN candidates as of 2016 (NCSBN, 2012-2017). Though the NCSBN data is hopeful, a complementary data source that reports the educational progression of ADNs to the baccalaureate and higher is needed. A consistent, systematic approach to the collection and analysis of such a national data source is essential if the US is to track progress toward 80% BSN by 2020; this research provides direction to reach this goal.

Following the 2010 IOM report, national education leaders, representing ADN and BSN entry-level nursing programs, endorsed the movement to facilitate academic progression of RNs to the BSN and beyond (AACN, AACC, ACCT, NLN, NOADN, 2012). Simultaneously, Robert Wood Johnson Foundation (RWJF)-sponsored Academic Progression in Nursing (APIN) initiatives began to take hold throughout the country (ANA & OADN, 2015). In 2015, the ANA and the Organization for Associate Degree Nursing (OADN) released the *Joint Position on Academic Progression to Meet the Needs of the Registered Nurse, The Health Care Consumer and the US Health Care System*, a summary of progress related to academic progression in nursing, incorporating strategies to transform nursing education for the US (ANA & OADN). Very recently, efforts to sustain the RWJF work have culminated in the creation of the new National Education Progression in Nursing Collaborative (NEPIN) (OADN, 2017). NEPIN represents a partnership among the National Forum of State Nursing Workforce Centers and the OADN aimed at continuing the foundational work accomplished through the RWJF APIN initiative (OADN). The identification of consistent approaches to data collection related to the educational advancement of RNs to the BSN is a pivotal goal of NEPIN (OADN). In addition, NEPIN seeks to create a comprehensive national repository of nursing education progression models to facilitate their replication (OADN).
These national initiatives demand attentive examination of progress on the educational advancement of RNs. This research strives to aid the development of a framework to guide this state’s ADNs from entry into practice to the BSN or higher, while supporting the establishment of fruitful programs, models, and collaborative partnerships. As a steward for educational progression of graduates, the NE-ADN is committed to research that establishes clear measures of progression in addition to factors that may influence it.

**Contribution to the body of evidence to support 80% BSN by 2020**

**Appreciation of the experience of ADNs who return to school.** The groundwork for this research began with the metasynthesis of the experiences of RNs returning to school for a baccalaureate in nursing (Perfetto, 2015). The study collates the qualitative research available to guide understanding of the challenges of RNs advancing their education as it answers the research question, *What is the experience of RNs who return to school to earn a baccalaureate degree in nursing?* (Perfetto). This inquiry brought forth themes revealing significant challenges of this educational journey that explored readiness to begin, the need to feel valued, overwhelming feelings of inadequacy related to balancing increased demands, resolving and accepting the help of others, and finally realizing growth in response to the education (Perfetto). The results of this research call for detailed examination of current approaches to RN-BSN education and related responsive adaptations to address them (Perfetto).

**Addressing the need for data.** Based upon the awareness that close to half of the state’s RN candidates are prepared at the associate degree level each year, the next logical step for this research was to establish awareness of the frequency of enrollment and completion of a baccalaureate or higher degree programs for recent graduates. Given the deficiencies in the state’s available nursing workforce data, the collection and analysis of data by the NE-ADN to
respond to this need was prioritized. Following the construction of the NE-ADN Graduate Database, the initial, descriptive analysis established an awareness of enrollment and completion of baccalaureate or higher degree programs by NE-ADN graduates from 2010-2015, through June 2016. In addition, the NE-ADN Graduate Database provided a demographic and academic description of the graduates. Data sources that determined engagement in educational advancement informed when and where students enrolled. Stakeholders embraced the evidence that 54% of NE-ADN graduates were engaged in educational advancement, however they expressed disappointment that only about one quarter attend the state’s public institutions to advance. The data analysis established the need to learn about variables that might be associated with educational advancement.

The third study comprising the dissertation, explored the variables associated with engagement and persistence in educational advancement through the development of predictive statistical models. The predictive models utilized a unique metric applied to each graduate that quantified their persistence with educational advancement over time since graduation. The calculation of the persistence ratio considered the expected differences among more recent graduates (i.e. 2015) and those that graduated earlier (i.e. 2010), facilitating their relative comparison with respect to progress toward a baccalaureate or higher degree. In addition, statistical testing of the dichotomous variable, Engagement in Educational Advancement, yes or no, assisted awareness of variables that could be related to engagement or the lack of it.

This research made connections between what we know about ADN graduates as a group and the current likelihood of their academic progression. The statistical modeling employed in this study accounts for between one and six percent of the variance in persistence and engagement in educational advancement, respectively, reminding that there are numerous other
variables impacting this outcome. Some of the relationships discovered make practical sense, like the positive predictive power of higher academic performance as an ADN student on engagement and persistence with educational advancement. Knowing that the odds of educational advancement for NE-ADN graduates decreases with increasing age is helpful to guide outreach to the spectrum of RNs to promote their educational advancement. Other relationships, however, require further examination to establish their practical significance on ADN educational advancement, such as the positive predictive power of applying for federal financial aid while an ADN student, and the negative impact of non-US citizenship. The overarching implication of these results, however, enables academe and practice to move forward with an evidence-based awareness of factors that may inhibit or promote ADNs to advance their education.

**Next Steps: Implications for Practice, Education, and Research**

The findings of this research provide evidence to inform the response of academic/practice partnerships to develop more meaningful and approachable RN-BSN pathways for the state’s RNs. The descriptive data analysis identified the need for additional and varied opportunities within the state’s public higher education system for NE-ADN graduates to advance to the BSN. The identification of variables associated with educational advancement can help target groups of ADNs to address their need for support to advance. Although most conclusions are neither unexpected nor alarming, and may be consistent with the intuition of many, they provide empirical evidence to commence targeted outreach to ADN students and nurses to encourage their educational advancement.

**Implications for practice.** Practice setting RN-BSN program recruitment designed in collaboration with the academic community can help target ADNs 28 years of age and above to encourage their advancement in response to the evidence presented here. Gentle guidance of
older ADNs, who may vividly recall the challenges of their ADN program, is necessary to
address their hesitancy to take the initial steps to advance. As ADNs begin the exploratory
process to advance, awareness of academic advisors related to the need for extra encouragement
of those who earned lower GPAs is helpful to guide conversations.

Continued motivation from nurse leaders may be necessary for many ADNs to advance
their education, particularly in the presence of adversities like financial challenges. Interestingly,
this research demonstrated increased persistence and engagement in educational advancement
among ADNs who acknowledged the need for financial assistance while in the ADN program.
The concept of grit, a trait-like quality that represents persistence in pursuit of personal goals
despite adversities or setbacks, is the focus of recent educational research and may be related to
this phenomenon (Wolters & Hussain, 2015). Perseverance, one aspect of grit, emerges as a
predictor of student strategies shown to support academic success (Wolters & Hussain).
Educational research shows that motivation to learn or succeed is an important precursor of
energy and effort on the part of the learner, particularly in the face of adversity (Wolters &
Hussain). For ADNs, motivation may come in the form of the continued emphasis on BSN
preparation for nurses, opportunities for advancement in the workplace, and/or the
encouragement of a nurse manager or a peer. In addition to motivation, self-efficacy, the belief in
one’s own ability to succeed, is an essential component of student success (Wolters & Hussain,
2015). Consistent with the results of this research and that of Wolters & Hussain, nurses who
seek to advance their education must perceive their own self-efficacy to do so.

**Implications for education.** Increased awareness of the patterns of educational
advancement by associate degree nurses can assist related programmatic planning and policy
development. For example, in response to these data, planning for the development of the first
public online RN-BSN program in this state has begun. This response demonstrates the absolute necessity of data to advance public policy and programmatic initiatives. Further, this programmatic response illuminates the need for more PhD prepared nurse scientists to lead the creation of similar databases to address increasingly complex questions for nursing.

Results of this study provide direction for ADN and RN-BSN programs related to the variables associated with the academic progression of RNs. Emergence of the NE-ADN final GPA as a strong predictor of engagement and persistence in educational advancement is consistent with higher education admission standards that are associated with student success (DiRamo & Jarvis, 2011; Gammell, 2008; Martinez, 2012; Perez, 2014; Tinney, 2012; York, Gibson & Rankin, 2015). These data demonstrate that prior academic achievement among ADNs may influence their educational advancement later. Consistent with these data analysis and recent educational research (Wolters & Hussain, 2015), opportunities for students to perceive their own greater success in the ADN program may increase their self-efficacy, or confidence, to approach educational advancement later. This could impact ADN program policies and teaching practices that can engender higher student performance, achievement, and academic confidence.

The awareness of the experiences of RNs returning to school can guide the attention of RN-BSN program leadership and faculty to the needs of students who are balancing many life demands as they attempt to advance educationally. A recent study examining persistence in a large, accelerated, online RN-BSN program concluded with the need for an early identification process for at-risk students (Cipher, Mancini & Shrestha, 2017). The capacity to quantify persistence using the PRS metric might help similar programs track and assist students who
frequently enter and exit. Conversely, ADN programs tracking the PRS of graduates with whom they are no longer connected minimizes the utility for these programs.

**Implications for research.** Over and above its importance to this state, this research demonstrates the importance, utility, and replicability of the NE-ADN Graduate Database for ADN programs throughout the country. Adoption of strategies presented here can assist ADN programs to become more aware of the educational advancement of graduates and demonstrate their commitment to reaching 80% baccalaureate preparation of RNs by 2020. In addition, similar data analyses can support the sustainability of the associate degree as an entry level to practice as a registered nurse.

Due to lack of conclusive evidence, this study demonstrates the need for further tracking of relationships between academic progression and race and ethnicity, as well as status as a non-citizen. Interestingly, non-citizenship as a negative predictor of academic progression could represent emerging issues of immigration and opportunities among non-US citizens. Related to the goal to achieve increased diversity among the ranks of highly educated nurses, this study points to the need to monitor academic progression among nurses from under-represented groups.

This research drives the need for additional, related inquiry. Some examples of the many and varied opportunities follow:

1. **Qualitative:**
   a. Conduct focus groups of ADN graduates in the workplace who are not engaged in educational advancement to determine barriers and facilitators. Given the engagement and persistence of younger NE-ADN graduates and non-US citizens
demonstrated through this research, attempt to recruit participants who are non-US-citizens greater than 28 years of age.

b. Conduct focus groups of practice based nurse leaders to establish and promote their awareness of the barriers and facilitators of ADN educational advancement.

c. Conduct focus groups of ADN leadership to establish and promote awareness of their accountability to track graduate educational advancement. This is necessary to promote the essential nature of these data as they relate to the sustainability of ADN programs.

d. Design and study an approach to academic advising based upon awareness of the variables (i.e. ADN program GPA, age of ADNs) associated with graduate engagement and persistence in educational advancement.

e. Examination of support systems in place at NE-ADN colleges and nationally for their impact on student performance as evidenced by increases in GPA.

2. Quantitative:

a. Continued use of the NE-ADN Graduate Database to further explore barriers and facilitators of educational advancement through stratification by demographic and academic variables (i.e. GPA, Age, Race/Ethnicity)

b. Refreshment of the NE-ADN Graduate Database to include more recent graduate cohorts, particularly following the enhancement of opportunities to advance, increases in recruitment efforts, etc., in an effort to assess impact.

c. Assist additional ADN programs to establish similar approaches to data collection and analysis to track educational advancement of graduates.

d. Application and study of the Persistence Ratio Score (PRS) to an RN-BSN
program.

e. Testing of strategies to improve ADN GPA that minimize grade inflation.

**Conclusion**

The 2010 IOM report brought to light research in support of BSN preparation in the context of multiple, successful educational pathways into the profession (IOM, 2010). Notable dialogue and initiatives have grown out of the report while it has begun to align the profession toward a new framework, or paradigm, for entry-level nursing education. Kuhn’s notion of paradigmatic change applied to nursing education can set the stage for new opportunities for the profession and its members. Wherein evidence exists to sustain ADN programs that seamlessly lead to a baccalaureate degree, true acceptance of multiple pathways to the BSN can occur. Evidence is essential for the profession to embrace multiple pathways to the BSN that would represent a true paradigm shift. This dissertation begins a research agenda to demonstrate the success of ADN education as a means to achieve a baccalaureate or a higher degree in nursing. Lessons learned from this research can help establish initiatives and academic/practice partnerships that guide the development of approaches and policies to help the nation reach 80% BSN by 2020.

The activities undertaken as part of this research are the beginning of a culture of accountability for the educational advancement of ADN graduates. The availability of a public associate degree pathway to registered nursing is a vast and vital opportunity for diverse individuals seeking to care for others and elevate themselves as professionals. Without this pathway, many would not pursue a nursing career. The contributions of these individuals to the nursing profession throughout the US are immeasurable and priceless. Brief reflection upon the contribution of colleagues who have entered the noble profession of nursing with an ADN is
convincing. ADN graduates are among our staff nurses, nursing faculty, nurse leaders, nurse scientists, and so much more. While many have advanced their education to the highest degrees, many more need encouragement and assistance to do so. This research serves as a pivotal beginning of increased efforts to reach 80% BSN locally, regionally and nationally.
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