



Educating The Technology Native Nursing Student At Three Critical Phases

An Evidenced-Based Approach To Combating The Projected Nursing Shortage With
Contemporary Solutions

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The Problem

For the last 16 years, nursing has been ranked as the most trusted profession (AACN, 2017). Everyone will cross paths with a nurse at some point in their lifetime; and patients always remember the “one nurse” who brought comfort during their darkest and most joyful moments.

But, the nursing profession is facing an alarming future due to a significant labor shortage. The demand for nurses is expected to grow by 1,009,000 by 2024. The result is a deficit of 569,700 nurses or a total expected workforce deficit of nearly 18% (BLS, 2015).

Why Does This Matter?

The growing nursing shortage leads to a number of alarming problems within the U.S. healthcare system, including:

- 1) poor staffing within tertiary care facilities
- 2) lack of patient access to primary healthcare
- 3) increase in mortality rates¹
- 4) increased hospital readmissions²
- 5) increased infections for patients³

Considering these systemic risks that will increase as the nursing shortage increases, the need for more nurses in the United States is glaringly obvious.

Addressing and correcting the nursing shortage begins with the most fundamental question: what is causing the shortage?

Generally Accepted Contributions

Nursing academia presents “generally accepted” contributing factors feeding the nursing shortage and most remedial measures focus on these two causes:

- Lack of Faculty
 - The AACN reported that nursing schools turned away 64,067 qualified nursing students in 2016 due to lack of faculty (AACN, 2017). Nursing schools experience an 11.8% attrition of faculty (Fang & Bednash, 2014).
- Aging Workforce
 - The NCSBN found that 55% of the nursing workforce was age 50 or older, which will lead to 1 million nurses reaching retirement age within 10-15 years (Harding, Bailey & Stefka, 2017).

¹ Mortality rates increase by 6% on hospital floors that are poorly staffed (AACN, 2017).

² Hospital readmission also increase with high nurse-to-patient ratios.

³ Strong association has been identified “between high patient-to-nurse ratios and nurse burnout with increased urinary tract and surgical site infections” (AACN, 2017, p. 4).

These contributions have become “buzzwords” in nursing education to the point that nearly all research strategies for addressing the nursing shortage listed by the AACN are aimed at these two factors.

However, focusing solely on these two factors is both limited and incomprehensive. It also fails to consider other key contributing problems. Specifically, it ignores the potential that nursing education itself is contributing to the nursing shortage..

Nursing Education’s Contribution to the Nursing Shortage

By looking at the statistics that exist within nursing education as it stands today, we can see certain trends arising:

- Rejecting Qualified Applicants
 - 34% of qualified nursing school applicants are rejected each year (NLN, 2015).
- High Attrition Rates
 - The 28% attrition rate for those students that are accepted into nursing school (ATI Testing, n.d.), which is nearly 10% higher than ALL undergraduate programs nationally (NCES, 2018).⁴
- Substantial Failure Rates
 - 109,689 potential nurses failed the licensing exam in 2018 which is a 26.9% failure rate (NCSBN, 2019).
- Departing New Nurses
 - 28.5% of new nurses leave their first job within a year due to stress and poor training (Nursing Solutions, Inc., 2016).⁵

The effects these problems have on the nursing shortage can be starkly seen in the following hypothetical scenario: assuming a group of 100 qualified applicants (as defined by the NLN, 2015).

- Only 66 will be accepted to nursing school
- Only 54 will graduate from nursing school
- Only 39 will pass the licensing exam

⁴ *While 25% was reported as acceptable, this study was based on a questionnaire of ~600 UK nursing students (Fowler & Norrie, 2009)

⁵ The average hospital loses \$6.6M annually due to RN turnover (Nursing Solutions, Inc., 2016).

The result: 61 qualified potential nurses will *never* make it to the hospital floor.

The process of nursing education as it exists today is losing nearly 61% of qualified applicants.

While the major focus of academics, governing bodies, and research addressing the nursing shortage is on the lack of faculty and the aging workforce, a serious consideration must be given to the failures of nursing education itself in losing the majority of qualified candidates.

When the statistics are reviewed holistically, it becomes clear that innovative education reform is required to make any real impact on the nursing shortage. Campaigns to attract more nurses do little in the long-term if 61% will never make it to the hospital floor.

Industry Response To Nursing Shortage

Nursing education has been slow to adopt new technologies, strategies, and innovation in order to address the low rate of acceptance, high rates of attrition, and high failure of the licensing exams. As such, the leading firms and organizations within nursing education and licensing preparation remain stagnant:

- The largest online nursing education company was founded in 1938, before color TV and 45 years before the internet.
- The largest curriculum supplement company is used by 76% of nursing programs since their founding in 1998 by psychometricians (not nurses or nurse educators), and yet, nursing school attrition continues to increase by 1% annually (ATI Testing, n.d.).
- Nursing schools are attempting flipped classroom, but are understaffed and unable to provide proper implementation and facilitation.
- concept-based nursing works, but nurse educators are left to try to figure it out on their own, without support or resources.
- Scholars tend to shift blame to the students for being unprepared (Griswold, 2014).
- Many educators, including those at large established companies, have not cared for a patient in decades or are forced to teach outside their field of experience.
- Proposed strategies to improve education do not address expanded use of technology and the evolving student population (AACN, 2005).

Changing Nursing Education

At NRSNG, we believe that the fastest, most cost efficient, and effective way to end the nursing shortage is to tackle the aforementioned deficiencies within nursing education itself. If the current deficiencies are addressed, nursing schools will be able to:

- Admit more Qualified Applicants
- Reduce Attrition Rates and
- Decrease Failure Rates on the licensing exam

The consequence is that 250% more new nurses reach the hospital floor confident and prepared so they stay in their first job longer. This fact could have a significant impact on the shortage.

At NRSNG we have found that the current deficiencies in nursing education can be effectively addressed in a low cost method by utilizing new technologies, incorporating new strategies and being innovative in approaching nursing education.

As a company we focus on:

- 1) Modernized teaching methods using our proprietary pedagogy: the Core Content Mastery Method™;
- 2) Innovating how and what material is developed for the student to build a firm foundation delivered in a multi-modal, proprietary method; and
- 3) Using new technologies to engage technology native learners.

Modernized Teaching Methods Using the Core Content Mastery Method™

Our pedagogy, the **Core Content Mastery Method™** or CCMM enables educators to easily identify the core content a learner must master. The Core Content Mastery Method™ provides an outline for creating and delivering that content in a learner focused, multimodal environment thereby delivering fast, relevant, and succinct content.

Technology natives, defined by Pensky (2001) as those who have spent their entire lives surrounded by the tools of a digital world, process information differently than their predecessors. Using the Core Content Mastery Method™ educators can develop and deliver curriculum to meet the learning preferences of the technology native.

Our proprietary training and structured platform around CCMM enables ease of curriculum development, storage, and delivery. With CCMM, nurse educators are able to save time developing lesson plans while feeling confident they are teaching those things that best enable to learner. Curriculum is developed and taught by CCMM and NRSNG trained nurse educators who are currently practicing in their specialty field. Educational institutions then gain complete access to our growing library of curriculum and resources.

Universities and educational institutions are able to harness the data from our global platform to ensure students are progressing inline with passing standards and reduce costs in delivery of content. Results obtained after post implementation of CCMM are discussed below.

Innovation Using a Multi-Modal, Proprietary Method

Technology native students prefer teaching that is “fast, relative, and succinct” (Stevens & Nies, 2018). Meeting this need requires personalized educational content that delivers material the way the student prefers to learn.

Carulla and Hipona (2018) state that it is essential for nurse educators to understand the learning style of their students as “information about the learning inclinations of students can reinforce learning for the people who are poor performers” (p. 8). Additionally, students who are in jeopardy of failure can see improved outcomes with education focused on their learning style.

Using the VARK (visual, auditory, read/write, kinesthetic) approach to learning styles, NRSNG identified activities that match each learning preference.

Visual:

- Videos with visual tracking elements
- Color coded reference sheets
- Care plans
- Medical images

Auditory:

- Audio recordings
- Video audio on app

Read/Write:

- Concise lesson outlines
- Transcripts
- Case studies
- Care plans
- Flash cards

Kinesthetic:

- Lesson guides
- Reference sheets
- Mobile questions and games
- Case studies
- Flash cards

Reinforcement is achieved via mastery quizzes associated with lesson content as well as self directed mastery check-ins. Customized study plan building with statistics allow the student to focus on deficiencies and track improvement and content mastery.

New Technologies to Engage Technology Native Learners

“The digital generational gap occurring between the baby boom generation professors and the millennial learners is profound.” (Stevens & Nies, 2018)

According to the AACN (2019), there exists over a three and a half decade age gap between the average age of the nursing professor and the new nurse graduate.

NRSNG is a digital learning platform built explicitly to address the needs of technology natives and deliver curriculum developed with the Core Content Mastery Method™. Using NRSNG, students gain access to mobile and web learning tools built by passionate engineers and populated with content that is based upon the CCMM™.

The state of the art content is accessible from any device, any time, anywhere. With a few clicks, students are able to build individualized study plans, track progress via analytic tools, and even take simulation licensing exams. This powerful tool combining intuitive design with the CCMM pedagogy is what makes NRSNG the best place to learn nursing™. Educators are able to deploy concept-based nursing or flipped classroom approaches with ease.

Additionally, students gain access to a private global support forum where they are able to interact with nursing students from all over the world.

Students also gain access to educators who are currently working in their field. With a click of a button, students can join a tutoring session about diabetes by a nurse who just completed a shift taking care of a diabetic patient.

Addressing Faculty Attrition

The AACN found that half of all faculty attrition was due to faculty leaving for non academic positions (Fang & Bednash, 2014). Contributing factors to leaving academia were; “lack of opportunities for career advancement, low salary, and leadership issues” (Fang & Bednash, 2014).

Faculty attrition can be addressed via the cloud based delivery of NRSNG. On campus nurse educators can assign lessons on NRSNG, track student progress, and then become facilitators of classroom discussion. This reduces the number of nurse educators required to educate a nursing cohort by allowing for larger class size while maintaining or improving the interaction with

students. Now, top tier educators are capable of leading larger cohorts in flipped-classroom and discussion-based learning, meaning less need for recruitment.

Nurse educators and education institutions benefit from cloud based storage and content development by NRSNG educators which allows for near immediate content creation, reviews, edits, and delivery thereby drastically reducing the time from research to published - putting the most up-to-date, evidence-based curriculum in the students hands.

Individual educators also benefit from access to analytic tools allowing student progress tracking, the ability to assign study plans and modules, and to help improve confidence in their students. Armed with NRSNG, the educator can assign a lesson to students then act as a facilitator in a true “flipped-classroom” approach.

Empowering the modern nurse educator is crucial to ending the nursing shortage. Simply focusing on faculty attrition is shortsighted in that it fails to embrace modern technologies and will not provide the rapid response to the nursing shortage required. NRSNG provides a platform that enables the educator to educate at scale while embracing modern technologies and improving student outcomes.

Conclusion

NRSNG is the fastest growing nurse education company and the best place to learn nursing™.

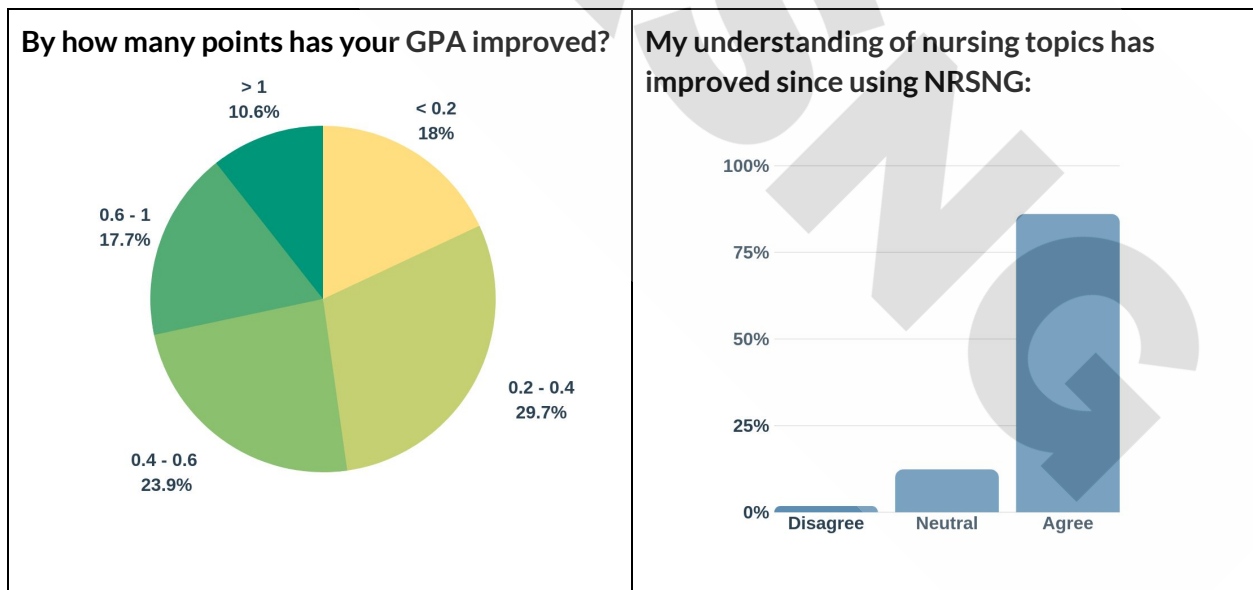
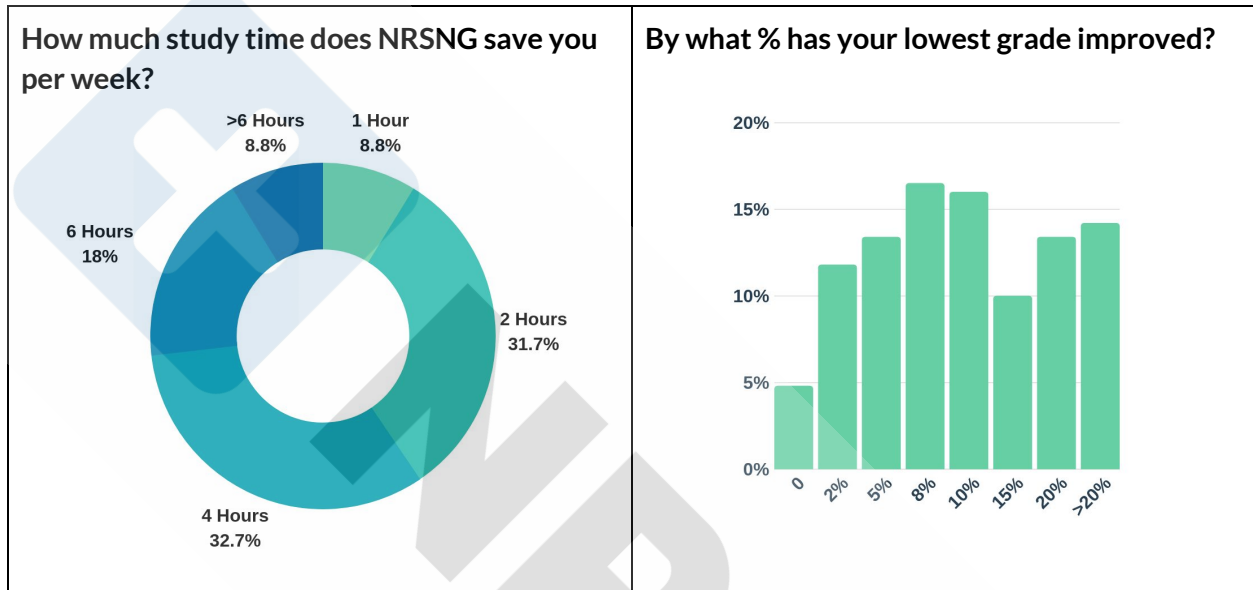
When NRSNG launched, we knew the country was facing a growing nursing shortage and we wanted to play a role in ameliorating that problem, but we also knew that ending the nursing shortage would require drastic action within education.

In January 2019, we made access to NRSNG free. We feel that democratizing education and providing the best place for nurses to learn™ requires bold action.

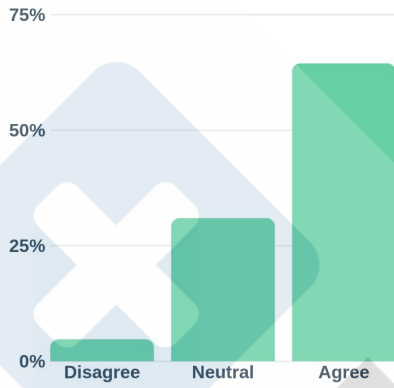
We invite you to help us end the nursing shortage.

The Results

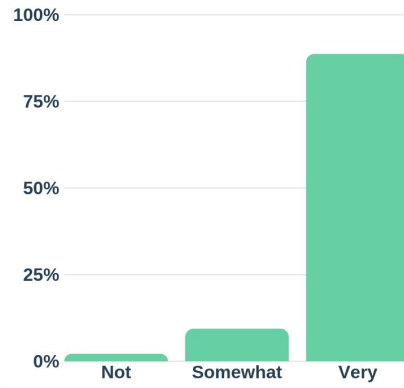
Below are results from a randomized survey of 250 NRSNG student users in 2019.



My confidence in passing the NCLEX has improved since using NRSNG:



How likely are you to recommend NRSNG to a friend?



NRSNG

References

- American Association of Colleges of Nursing (AACN) (2005). *Faculty shortages in baccalaureate and graduate nursing programs: Scope of the problem and strategies for expanding the supply*. Retrieved March 18, 2019, from <https://www.aacnnursing.org/News-Information/Position-Statements-White-Papers/Faculty-Shortages>
- American Association of Colleges of Nursing (AACN). (2017). *Nursing shortage fact sheet*. Retrieved March 18, 2019, from <https://www.aacnnursing.org/News-Information/Fact-Sheets/Nursing-Shortage>
- American Association of Colleges of Nursing (AACN). (2019). *Fact sheet: Nursing faculty shortage*. Retrieved from <https://www.aacnnursing.org/Portals/42/News/Factsheets/Faculty-Shortage-Factsheet.pdf>
- ATI Testing. (n.d.). *Foundational research to enable a national study of nursing student attrition*. Retrieved March 18, 2019, from https://www.atitesting.com/docs/default-source/research/research-brief---foundational-research-to-enable-a-national-study-of-nursing-student-attrition.pdf?sfvrsn=77e106e9_0
- Bureau of Labor Statistics (BLS). (2015). *Occupational employment projections to 2024 : Monthly labor review*. Retrieved March 18, 2019, from <https://www.bls.gov/opub/mlr/2015/article/occupational-employment-projections-to-2024.htm>
- Carulla, J. C., & Hipona, J. B. (2018). Attitudes towards learning and learning styles of nursing students in selected nursing schools: Basis for instructional strategic plan. *Nursing & Primary Care, 2*(5), 1-9. doi:10.33425/2639-9474.1082
- Fang, D., & Bednash, G. D. (2014). Attrition of full-time faculty from schools of nursing with baccalaureate and graduate programs, 2010 to 2011. *Nursing Outlook, 62*(3), 164-173. doi:10.1016/j.outlook.2013.12.002
- Fowler, J., & Norrie, P. (2009). Development of an attrition risk prediction tool. *British Journal of Nursing, 18*(19), 1194-1200. doi:10.12968/bjon.2009.18.19.44831
- Griswold, C. M. (2014). *Understanding causes of attrition of 1st- and 2nd year nursing students* (Doctoral Dissertation). Retrieved March 18, 2019, from <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1141&context=dissertations>

- Harding, M., Bailey M. & Stefka, S. (2017). Factors influencing nursing student success after readmission. *Teaching and Learning in Nursing*, 12(3).
<https://doi.org/10.1016/j.teln.2017.03.004>
- National Center for Education Statistics (NCES). (2018). *Undergraduate retention and graduation rates*. Retrieved March 18, 2019, from https://nces.ed.gov/programs/coe/indicator_ctr.asp
- National Council of State Boards of Nursing (NCSBN). (2019). *2018 NCLEX pass rates*. Retrieved March 18, 2019, from <https://www.ncsbn.org/12171.htm>
- National League for Nurses (NLN). (2015). *Percentage of qualified applications that were rejected by program type*. Retrieved March 18, 2019, from [http://www.nln.org/docs/default-source/newsroom/nursing-education-statistics/percent-age-of-qualified-applications-that-were-rejected-by-program-type-2012-and-2014-\(pdf\).pdf?sfvrsn=0](http://www.nln.org/docs/default-source/newsroom/nursing-education-statistics/percent-age-of-qualified-applications-that-were-rejected-by-program-type-2012-and-2014-(pdf).pdf?sfvrsn=0)
- Nursing Solutions, Inc. (2016). *2016 National healthcare retention & RN staffing report*. Retrieved March 18, 2019, from <https://avanthealthcare.com/pdf/NationalHealthcareRNRetentionReport2016.pdf>
- Prensky, Marc, (2001). Digital natives, digital immigrants: Part 1. *On the Horizon*, 9(5),1-6,
<https://doi.org/10.1108/10748120110424816>
- Stevens, K. P., & Nies, M. A. (2018). Transforming nursing education in a 140-character world: The efficacy of becoming social. *Journal of Professional Nursing*, 34(1), 31-34.
[doi:10.1016/j.profnurs.2017.07.001](https://doi.org/10.1016/j.profnurs.2017.07.001)