Review Article

Bridging the Education Gap: Developing Clinical Judgement through an Unfolding Case Study

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Abstract

Background: Nursing education programs continue to face an immense amount of change over a short period of time. The introduction of the National Council of State Boards of Nursing (NCSBN) clinical judgement model (NCJMM), the Next Generation (NGN) version of the National Council Licensure Examination for Registered for Registered Nurses (NCLEX-RN), and *The Essentials: Core Competencies for Professional Nursing Education* from the American Association of Colleges of Nursing (AACN) have nursing programs quickly adjusting curriculum to meet national nursing education agency's recommendations for future nurses.

Methods: This paper provides reflection and interventions for nursing educators and leaders to consider as they navigate the post-pandemic healthcare demands of new graduate nurses. Implementing activities encouraging critical thinking to build clinical judgement is paramount for undergraduate nursing curriculum.

Conclusion: Curriculum must match the required knowledge and skills of their discipline. With the growing acuity of illness and diversity of those seeking healthcare, nursing knowledge does not merely represent textbook content, but a mindset which can analyze the full clinical picture and plan of care accordingly.

Key Words: AACN Essentials, Clinical Judgment, Undergraduate, Nursing Education, Unfolding Case Study, Nursing Students

Introduction and Background

Continuing in the post-pandemic world of nursing education is by no means an easy task for educators. Many programs are still in the process of rebuilding a "new normal" structure of traditional brick and mortar-based education programs, transitioning online courses back to ground based on program needs. Prelicensure registered nurse programs (associate and baccalaureate alike) face not only how to navigate the post-pandemic healthcare system, but a remapping of curriculum based on *The Essentials: Core Competencies for Professional Nursing Education,* set forth by the American Association of Colleges of Nursing (AACN) (2021).[1] In addition, programs are still reeling from the introduction of the Next Generation (NGN) version of the National Council Licensure Examination for Registered

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Nurses (NCLEX-RN) by the National Council of State Boards of Nursing (NCSBN) and the National Clinical Judgement Measurement Model (NCJMM) pre-pandemic, in which faculty found themselves rushing to adjust learning activities to match the framework for the NCLEX-RN exam changes slated to be implemented in 2023. Curricular changes must enable new graduates to employ clinical reasoning and judgment in all aspects of the patient plan of care.

What is known regarding clinical judgement, critical thinking, clinical reasoning, and application of knowledge to practice is not new: it is essential for nurses to employ for safe patient outcomes. In fact, they have been pioneered by leaders in the field of nursing such as Patricia Benner and Christine Tanner; even the *nursing process* serves as foundation for developing clinical judgement. However, in an industry such as healthcare, with its ever-expansive reach and diversity of acuity and needs of populations, nursing education is called to evolve further. The push for NCLEX-RN exam reform started as far back as 2012 when the NCSBN conducted a literature review of 200 manuscripts to find, indeed, nursing education was making changes, but more importantly, 50% of nurses were involved in errors in which 65% were attributed to poor clinical decision-making/judgement; in addition, 80% of employers were not satisfied with the decision-making skills of novice nurses.[2] The AACN has responded with the new *Essentials*(2021) in order to meet the demand for new graduates that are *"residency-ready"*; and produce generalist nurses prepared to practice in any setting.[3] While the aforementioned strategies to address novice nurse practice issues are relative to the United States, it is plausible to assume the concepts of clinical reasoning and judgement for safe practice extends beyond locality and geographic borders.

The question for educators may now be one of *"where to start?"* and *"what is the priority?"*: the answer to which is not clearly discernable but can be managed by incorporating elements of the aforementioned. To state it plainly…use what we already know as nurses and educators; draw from personal practice experience and recreate situations as application-based learning for students. Referring to the KISS mnemonic (keep is simple stupid), create the activity to push the bar of student knowledge, but simplify the process for them to get to the right solution!

The Strategy in Real Life

During this author' stint in prelicensure nursing programs, and prior to introduction to the NGN and NCJMM, the hype in education was *application-based* and *active learning*. With a non-education-based master's degree, there was a lot of independent education under taken by this author to fully grasp these concepts. In the end though, it all made sense…teach what you know, using actual life experience as a registered nurse! Make the knowledge being brought to the table digestible and provide it through meaningful examples that can be remembered and recalled later. This is also where educators struggle, not so much lack of experience, but more of *how* to recreate a meaningful learning experience. As educators, we have been involved in plenty or training or educational activities which may have left us wanting more; this is the *meaningful* part of learning or lack-of-meaningfulness in some instances. Where do we draw the line between *fun* (which often is the substitute for active learning) in the classroom and *acquisition* of knowledge? Meaningfulness of application! The theory to knowledge gap can be bridged not just through clinical experiences in the field, but interactive classroom engagement and, this authors favorite, high-fidelity simulation (HFS).

Creating an Unfolding Case Study to Improve Clinical Judgement

The idea to create an unfolding case study came from the desire to incorporate course content and concepts students traditionally struggled with in the second medical surgical course taken senior year. Based on trending standardized testing scores on the Health Education Systems Incorporated (HESI) Medical-Surgical specialty exam and unit exams, the following themes emerged: concepts related to circulatory overload, distributive shock, complications related to neuro/spinal injuries, and acute respiratory deviations (mainly hypoxic failure and V/Q mismatch). During brain storming this author remember a patient assignment, from years back, fitting a lot of these concepts. From there the unfolding case study was built.

Ethical Determination of Participants

The author and simulation director worked together to create an application-based learning experience for the students. No data (identifiable or non-identifiable) was collected from students participating in this learning exercise. The simulation activities completed by students was part of their clinical experience and mandatory. As part of the standard debriefing process adopted by the nursing program, students were videotaped, and group performance was viewed by peers and the faculty leading the debriefing. Students signed a photo/ video release upon enrolment in the nursing program which was applicable to this student experience. It was determined there was no risk to confidentiality or anonymity of participants therefore no formal submission for review of human subjects research was submitted to an institutional review board (IRB).

Patient Scenario

Week 1 of the unfolding case study, students are introduced to their patient; a 24-year-old male involved in a motor vehicle accident (MVA). The patient was unrestrained and transported to the emergency department (ED) via ambulance with a cervical collar in place. Following testing and examination, the patient's diagnosis is complicated by a left lower leg fracture, facial lacerations, and 2 rib fractures. The remaining assessment upon admission to the ED is unremarkable and the patient is awaiting transfer to surgery for fixation of the left lower leg, then admission to the trauma step down unit. As the scenario progresses over the next 3 weeks, the patient decompensates quickly over a period of 36 hours (representing closely the patient scenario encountered in practice). The patient unfortunately suffers a pneumothorax following surgery, basilar skull fracture develops, chest tubes, central venous and arterial lines placed. The developssepsisthe last week or the scenario and remains on prolonged mechanical ventilation related to respiratory failure and ARDS.

Meaningful Learning Through Simulation

Students in the second medical surgical course completed a six-week clinical rotation (two 12-hour days). For the last 4 weeks, student spent 1 full day (12 hours) on an in patient nursing unit, and on the second day students are on the unit for 8 hours, then spent the remaining 4 hours in the simulation lab. During this time, they completed a pre-briefing, high-fidelity simulation, followed by debriefing. Each week the patient scenario continued to evolve into a more acute prognosis than the week before. Working with the simulation director, the HFS mannequin's appearance would change weekly as the scenario unfolded, making the pre-briefing activity match the simulation experience for that day.

In each session the students were introduced to that week's patient condition and engaged in a pre-briefing activity requiring them to work as a team to identify items which were to be included in the following categories and write them on a whiteboard: 1) Immediate patient concerns, 2) interventions to address each concern, and 3) potential complications related to the overall scenario. A fourth category, not on the whiteboard, was Socratic in methodology in which the pre-briefing facilitator asked students how the nurse would evaluate if interventions had been effective, or, if another intervention is indicated. Most clinical groups did not exceed 10 students, with the usual number of 8 students per rotation. Based on a 16-week semester, the entire class rotated through the simulation before finals week and HESI Medical-Surgical specialty exam testing.

Following the pre-briefing activity students divided into groups of 3 or 4 and completed a HFS based on the patient scenario for the week. Students were challenged to apply knowledge of the patient's status to the status in which they found the patient in the sim lab and respond to changes in status and orders received during their simulation. Each student group's simulation was catered to one aspect (concern) of the patient's status; however, students were not aware of the priority concern prior to entering the sim lab. If pre-briefing identified a change in neuro status, one of the groups would be given this aspect and required to plan care accordingly. If crackles were identified, and the concern was possible sepsis/ ARDS, students had to adjust priorities, and so on with each group. Student simulation groups were video recorded, and students signed release (photo and video) upon admission to the nursing program.

After all groups completed simulation, students would watch each groups performance via video recording and reflect on strengths and weaknesses.

The facilitator for debriefing had the task of walking the students through each separate scenario and point out which items were missed, which were addressed, and those which students ran out of time to complete (routine ordered tasks such as re-taping the endotracheal tube, hanging antibiotics, wound care, etc.). Having the ability to review personal performance, receive peer feedback, watch their peers' performances, and guidance from the facilitator, afforded them the ability to redesign the plan of care for the simulated scenario.

Application to Current Educational Endeavors

With the push for curriculum revision based on the *Essentials*, a shift in content delivery from the more "traditional" model of educators as the knowledge dealer, to the educator as a facilitator of learning, challenges programs to adopt concept-based learning as the new paradigm. This style of teaching is not new to education, but one which may not have been introduced to all finding themselves nestled in a faculty position; especially those without an education-focused master's or doctoral degree. Many programs have made, or are making, the shift to concept-based curriculum which encourages problem-solving, critical thinking, and affords nurses the ability to transfer and apply knowledge to the clinical situation. The ability to critically think and adjust the patient plan of care efficiently will assist in bridging the theory to practice gap problematic to new graduate nurses. Building clinical judgement and reasoning is essential for success in bedside practice at all educational levels and specialties of nursing, but it must have the foundations somewhere…and that place is undergraduate nursing education. Instead of "filling student's heads with facts" it would be more beneficial to teach students a consistent, systemic approach to understanding patient needs, planning care, and adjusting the plan of care as situations arise throughout the workday.[4] Waiting until a new graduate nurse enters practice, which can for many be an overwhelming experience, is not the optimal environment to build clinical reasoning and judgment.

Healthcare has always been complicated and peppered with obstacles to adapt to and overcome, but the post-pandemic world still seems unforgeable at times with many uncertainties looming overhead, and in the distance. A recently published article (2023) reports new graduate nurses often require additional education and mentoring clinically which may take up to six to nine months.[5] This additional training of new nurses is costly, timely, and further delays human resources (nurses) desperately needed at the bedside. Prolonging new graduate precepting, or steps in the residency process, to maximize clinical judgment and reasoning is not the end-all solution. A 2016 survey by the NCSBN noted while knowledge of the profession is essential it does not equate to clinical judgement equal to safe patient care, and elements of clinical judgment are stepwise and progressive.[2] Understanding the lag-time between research and its emergence mainstream; these results are already eight years behind! Therefore, implementing activities to build critical thinking and clinical judgement are imperative at the beginning of a nursing curriculum.

The NCJMM, designed to develop clinical judgement, is divided into 4 layers. Layer 3 represents 6 cognitive processes which are critical for clinical judgement. When looking at the specifics of each process, they closely resemble to the pre-briefing activities of the simulation exercise described above. Under layer 3, skills 1 (analyzing cues) and 2 (organizing clues) are like step 1 on the whiteboard (immediate concerns). Skills 3 (prioritizing hypotheses) and 4 (generating solutions) align with step 2 (identifying interventions for each concern), and steps 5 (take actions) and 6 (evaluation) cover step 3 (potential complications-prioritizing and differential diagnoses) and evaluation of effectiveness sought from the pre-briefing facilitator. The unfolding case study was created prior to the introduction of the NCJMM but goes to show how what we know as nurses and educators can be applied in a way to build student's clinical reasoning and judgment. Using guidance from the *Essentials*, and the NCJMM as the basis for clinical judgment, a curricular roadmap can be built to thread content throughout nursing curriculum in a stepwise fashion as identified by the NCSBN 2016 study.

The Next Step

What is known of the NGN NCLEX-RN is there has been a shift from traditional test question format (multiple choice, matching, multiple select) to one of which involves application of higher-level cognitive

skills involving multiple processes required of a nurse in practice. There are a minimum of three case studies along with a patient's health record, and six questions per case study using the six steps of the NCJMM Layer 3.[5] Unlike the traditional straight forward question writing of the NCLEX of old, new items include information in which the tester must decipher as critical or not to the patient's case. More so now is it ever important for educators to teach not just the knowledge of disease processes and interventions, but how to look at the overall patient picture and break it down into the sum of its parts. Analyzing trends in intake and output, labs, chest x-rays, etc. are all parts of the overall clinical picture.

Case studies can assist the student in determining the "*nice to know*" versus "*need to know*", expected versus unexpected findings, prioritizing interventions, and organizing the plan of care. Concept mapping is a way to help students organize symptomatology and the nursing process. Socratic method for questioning is a favorite of this author during classroom instruction. Seeking feedback from students about what is the next step in the plan of care, then if that intervention creates another situation…" *what should you as the nurse do now*?" The most exciting part of these activities is how the educator uses them; even combine concepts from multiple resources to develop an innovative activity for student achievement of clinical judgement. For clinical associated with the unfolding case study and simulation, this author created clinical paperwork using concept mapping of the patient's overall health status during their hospital stay. Included on a separate sheet were questions requiring the student to prioritize elements in the plan of care based on trending data and test results, scheduled testing, and potential complications related to the patient's health state.

The unfolding case study and revised clinical paperwork were implemented for three semesters; then the face of education was changed by COVID-19, halting all in-person activities. To continue with progress, some online class days were instructor-led case studies, but the hands-on application was lacking to fully facilitate learning clinical judgment. During the semesters, when unfolding case study activities were implemented, there was a substantial rise in scores on unit exams and increased participation during classroom discussion. HESI scores from the medical surgical specialty exam exceed the national mean for BSN students, in some instances by more than 100 points. While mean scores for the specialty HESI were usually at or above the national mean, the actual overall point increase was a welcomed finding. More so than any exam score, it was the confidence seen in students when hands went up in the air during class and the depth of discussion during lecture.

Future endeavors for this author will be to design a pilot study in which data will be collected by various modalities to evaluate the effectiveness of the unfolding case study and clinical activities related to perceptions of self-efficacy regarding clinical judgment capabilities of senior BSN nursing students. Additionally, as curriculum is revised to meet the AACN *Essentials*, the BSN program is planning a transition to competency-based evaluation in which the tenets of the NCJMM can be threaded throughout the curriculum, starting with first semester students. Redesigning nursing curriculum to incorporate activities focusing on identifying factors contributing to the overall clinical picture, versus symptomatology alone, allows for a comprehensive and multifaceted plan of care in which safety in ensured, and as a result, outcomes improve. While this author speaks to pre-licensure nursing programs in the United States, the tenants, like the nursing leaders before us, are universal to not just patient safety alone; but to help ensure the mental and physical wellness of future nurses as they enter practice facing the uncertainties of what the future holds and the anxieties remaining of a global pandemic.

Ethical Statement: The educational activity explained in the manuscript did not meet qualifications for human subjects research as it not seek to record data from participants, nor is any identifiable data included in the manuscript. Approval from an Institutional Review Board was not determined necessary.

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Declaration of interests: This author declares no conflict of interest.

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