



Creating Next Generation NCLEX® Test Items to Ensure the Success of the Nursing Workforce

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The National Council Licensure Examination (NCLEX®) was established in the United States in 1982 and in Canada in 2015 for the licensing of nurses. There are two types, the NCLEX-RN, used to license graduates of registered nursing programs, and the NCLEX-PN, which is used to license practical and vocational nursing graduates.

The purpose of the NCLEX® is to test nurses on essential skills that will help them be a successful nurse. However, there is a gap between what is learned in nursing school and what is tested on the NCLEX®. NCSBN reports that novice nurses are involved in 50% of medical errors, and 65% of errors are attributed to poor clinical decision making. Only 20% of employers are satisfied with the clinical decision-making skills of novice nurses (Saintsing, et al, 2011).

As a result, NCSBN is engaged in research to learn more about the NCLEX® and the types of questions that should be included on the exam. The research conducted by the NCSBN resulted in the creation of the Clinical Judgment Measurement Model (CJMM). The CJMM was designed to explore new ways of testing clinical judgment in the nursing profession as part of the licensure examination. Subsequently, an action model to incorporate specific concepts of the CJMM was required in order to close the gap between what is measured on the exam and what is taught in clinical nursing education (Next Generation NCLEX® News, 2019).

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Research on the CJMM, the Action Model, and Specific Test Item Types continue because they appear to be sound and can serve as a framework for measuring clinical judgment. Furthermore, research must continue to allow for empirical validation of the statistical properties of the items (NCSBN, 2020).

Presently, educators and test creators are now focused on revamping the NCLEX® to include higher cognitive-level test questions. These questions probe higher cognitive-level thinking of nurses in clinical situations. Next Generation NCLEX (NGN) items will be better suited to test clinical judgment. Higher cognitive-level test questions, furthermore, reflect a starting point from which new NGN Test Items can be written to improve upon the ability of the NCLEX® to test clinical decision making. These questions are designed to test students' clinical decision making in a more effective way than existing test items.

It is important for educators to help prepare students for success on the NCLEX®—specifically, via item writing and developing critical thinking and clinical judgment skills. The purpose of this document is to explain the impact of NGN on nurse educators preparing students for the exam. We will discuss trends in nursing education, as well as introduce the NGN content and how it will advance and improve nursing education to improve the standard of care in the United States and Canada.

What is Nursing Clinical Judgment (NCJ)?

NCJ refers to a comprehensive process that nurses use to treat clients. More specifically, NCJ is “the observed outcome of critical thinking and decision making. It is an iterative process that uses nursing knowledge to observe and assess presenting situations, identify a prioritized client concern and generate the best possible evidence-based solutions in order to deliver safe client care” (Next Generation NCLEX® News, 2019). In a literature review, 50% of errors in client care involved novice nurses, while 65% of errors were attributed to poor decision making. Only 20% of employers were satisfied with the clinical decision-making skills of novice nurses (NCSBN, 2020). These statistics call



attention to the fact that educators and test providers must better figure out how to teach and test NCJ.

Research is underway to learn more about NCJ, how it can be better instilled during nursing education, and how it can be tested on the NCLEX® exams. Ongoing work seeks to understand how NCJ relates to NCLEX® and how new questions types that better test NCJ can be included on the NCLEX® exam. To this end, it is necessary to determine whether NCJ is more than just possessing content knowledge regarding the field of nursing. Studies seek to assess what types of changes should be implemented, such as new question formats, to improve the ability of the licensure exam to test actual skills needed for nursing (Next Generation NCLEX® News, 2019).

What Factors Contribute to Nursing Clinical Judgment?

Research from the NCSBN has illuminated a list of factors—both internal and external—that influence the quality of NCJ (Next Generation NCLEX® News, 2019). Internal factors include things such as knowledge, experience, communication, emotions and perceptions, and professional orientation. External factors, on the other hand, include task complexity, time pressures, distractions, interruptions, and professional autonomy.

Sound clinical judgment among nurses is increasingly needed in today's ever-changing medical landscape (Sanders and Goble, 2020). As our population ages, intensity of care for clients increases, and as government regulations change, more work is needed to improve sound clinical judgment to keep up with the changes and improve the standard of care. There is an increasing demand for clinical judgment skills among entry-level nurses, who make a high number of errors. Beyond improving NCJ in entry-level nurses, improvements to NCJ could benefit nurses with all levels of expertise. Many of the adverse events that clients endure may be prevented if decisions had been made using good clinical judgment.

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Assessing Nursing Clinical Judgment

We have talked about NCJ and why it is such an important skill for nurses. Given this fact, the NCLEX® strives to be a reflective assessment of NCJ. The challenge in assessing nursing skills is the same as assessing skills in any field—licensure exams must ensure that nurses are prepared for their important role in the healthcare system in a manner that is more profound than simply knowing how to recite facts and protocols. Nurses must be able to synthesize information and make decisions to provide optimal client care. Assessing such skills can be tricky in standardized testing, which is why the NCLEX® has created a new class of test items called Next Generation NCLEX® or NGN items. NGN is based on a rich theoretical and psychometric framework.

The assessment of NCJ and related competencies in the licensure exam is important because if the NCLEX® is not measuring NCJ, it will fail to be a useful assessment and will ultimately reduce quality of care in the healthcare setting. Consequently, this will set hospitals up for failure. That's why ongoing research seeks to improve the items on the NCLEX® to keep up with the needs of the healthcare community in order to best assess the skills learned in nursing programs and ensure that nurses who pass the NCLEX® will be able to be successful in the field. Much attention has been paid to ways to conceptualize and assess NCJ from theoretical and psychometric frameworks, respectively.

NCJ can be conceptualized as higher-order cognitive constructs that can then be assessed by the NCLEX®. Dickison and colleagues (2016) propose a framework for designing a theory-based assessment to measure higher-order cognitive constructs. This framework creates a modular assessment system in which many different pieces fit together to create a unified system of assessment. Specifically, a conceptual model of NCJ is used to integrate cognitive theories and findings about the construct, laying the theoretical grounds for the whole assessment. Based upon this model, an assessment model can then be constructed to apply the theory into a psychometric model. The theoretical/conceptual and psychometric frameworks underlying NCLEX®



NGN items have been empirically proven to be useful metrics of measuring NCJ.

We will discuss these frameworks and NGN items in the following sections.

The Conceptual Clinical Assessment Model

Cognitive constructs—in this case, higher cognitive-level information processing related to NCJ—must be defined precisely before they can be measured. Therefore, a conceptual model is the first step in developing an information processing framework in order to assess NCJ (Dickison, 2016). A conceptual model of NCJ synthesizes cognitive theories and findings about the construct in order to characterize and test it.

The conceptual model is informed by nursing professionals' assessment of skills essential to nursing. Phaneuf (2008) notes that nurses must be able to manage a variety of client issues, such as complications and improvements in a client's condition. Nurses must also be able to communicate efficiently with doctors and other healthcare staff. In order to accomplish these tasks, nurses must have "observational and reasoning skills in order to make sound, reliable clinical judgments" (Phaneuf, 2008). Yet, as Phaneuf (2008) notes, "It is difficult to come up with a unanimous definition for clinical judgment, a concept which is critical to the nursing profession as a result of its outcomes." She writes:

"A difficult task for nurses is making a clinical judgment. It requires both intellectual and professional maturity. In particular, it requires the ability to pay attention, to reason and to summarize in order, to achieve logical deduction. Clinical judgment is complex because the nurse is required to have prior training in order to develop further understanding of the subject. It depends on her ability to observe, to identify relevant information, to identify the relationships among given elements and to reason. Clinical judgment in itself encompasses a cycle of sensory activities which begins with perceptions and which is followed by cognitive functions associated with the intellectual



processing of information through the mental operations of reasoning and judgment.”

NCJ helps nurses perform better on the job, making less errors and boosting client outcomes. In particular, NCJ helps nurses piece together bits of information, review them, and synthesize and interpret this data in a manner that is rational and utilizes critical thinking skills. Said another way, NCJ is a tool for professionals in nursing to better understand the problems in order to develop appropriate solutions. A clear understanding of the relevant information is needed to perform problem-solving. As a result, NCJ is also closely related to professionalism in the nursing field. It should be noted that clinical judgments are not only essential for nurses but for everyone in health care (Phaneuf, 2008).

While NCJ is recognized by nursing professionals as an important skill, it is one that is both “difficult to put into practice” (Phaneuf, 2008) and remains challenging to measure (Dickison, 2016). New nurses, such as those who have recently gained licensure (i.e., have just passed the NCLEX®), may find the process of mastering NCJ difficult. On the other hand, a more experienced nurse may be faster in assessing clients using NCJ as they may rely more on intuition. A roadblock to teaching NCJ in nursing education is that technological and administrative skills may be emphasized in some programs above NCJ, so the decision-making, intellectual aspects of nursing may be overshadowed by other types of skills which are, in actuality, supplementary to NCJ.

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The Importance of Higher-Level Cognitive Functions in NCJ

Foundational skills and knowledge in the field of nursing rely on four types of knowledge: empirical, conceptual, rational, and decision-making knowledge (Phaneuf, 2008). Empirical knowledge is knowledge obtained via one’s sensory mechanisms, while conceptual knowledge originates from reviewing and synthesizing empirical observations. Rational knowledge is obtained by



thinking about the data, and decision-making knowledge is used to drive decisions which can serve to optimize client care.

Clinical judgment is essential to providing competent and safe care for all healthcare professionals; however, only 23% of new graduates of nursing programs have the basic clinical reasoning and judgment skills needed to provide the best level of client care, and 80% of employers are not satisfied with the clinical judgment ability of nursing program graduates (Saintsing, et al, 2011). These statistics have revealed a gap between the curriculum of nursing programs and what is measured on the licensure exams.

Nurse educators must develop critical thinking skills in order to reduce errors on the job and provide the best standard of care. Experience plays a large role in success in nursing, with novice nurses making the most errors. Improving nursing education and the testing process for novice nurses seeking to obtain licensing can help improve the gap between classroom and clinic.

Higher cognitive functions are the main focus of the revisions underway in the NCLEX® questions. These functions relate to the high-level synthesis of learned information and data with a scientific process which can be used to optimize client care. More specifically, these higher-order cognitive functions include the recognition of cues in clients, analysis of such cues, and prioritization of hypotheses regarding what could be wrong with the client, which would ultimately lead to the generation of solutions that could be implemented and evaluated. Together, this suite of higher cognitive processes and skills are thought to form the theoretical basis for the construct of NCJ.

Now that we have discussed the importance of NCJ, we are well-prepared to discuss the testing models and frameworks that have been used to inculcate this skill in American and Canadian nurses via preparing for and taking the NCLEX®.



Measuring Effective Learning through Testing

As we have discussed, it is important that NCLEX® be able to measure NCJ, as it is fundamental to success in the nursing field. The NCLEX®'s design decisions are informed by a conceptual model, derived from research in the nursing field (Dickison, 2016; Phaneuf, 2008). Importantly, the conceptual model of NCJ, which is grounded in an information processing perspective, defines what to measure, but not how to measure it (Dickison, 2016). In other words, while the research shows that NCJ is important—perhaps the most important skill for new nurses—a separate body of research is needed to develop optimal assessments of this construct.

Psychometric measures that are not entirely accounted for in the conceptual model include dimensionality of measurement, response modeling, item authoring, scoring methodology, and so forth (Dickison, 2016). That's why the NCSBN has been working to develop an effective model to measure clinical judgment, which we discuss in the next section.

The NCSBN Clinical Judgement Measurement Model Can Help Model Nurses' Higher-Order Cognitive Learning

The research into nurses' clinical decision making, which was conducted by NCSBN, resulted in the creation of the CJMM. The CJMM is a flexible model that can be used to conceptualize the complex factors associated with NCJ in a simple, straightforward way. The CJMM can guide nurse educators to measure the application of specific cognitive processes necessary for decision making and rendering clinical judgments (Next Generation NCLEX® News, 2019). An Action Model has also been developed in order to include specific concepts from the CJMM in order to close the gap between what is measured on the NCLEX® and what is taught in clinical nursing education.

The new NGN item types are meant to help test nurses' ability to sort out different details regarding a client's illness and be able to identify the appropriate course of action in the hospital setting. Educators in nursing programs have a significant role in the development of these skills to help



novice nurses be better able to perform on the job, as well as to help future nurses succeed on the NCLEX®. The creation of the new NGN items is based upon both the CJMM and Action Models, which have been developed to help conceptualize and better address the steps nurses need to take in their everyday work to utilize their critical thinking, information gathering, sensory data collection, interpretation, and analysis to provide the best client care possible. NGN, therefore, represents the NCSBN's best effort in moving toward better methods to measure NCJ.

Layers of Clinical Judgment with CJMM

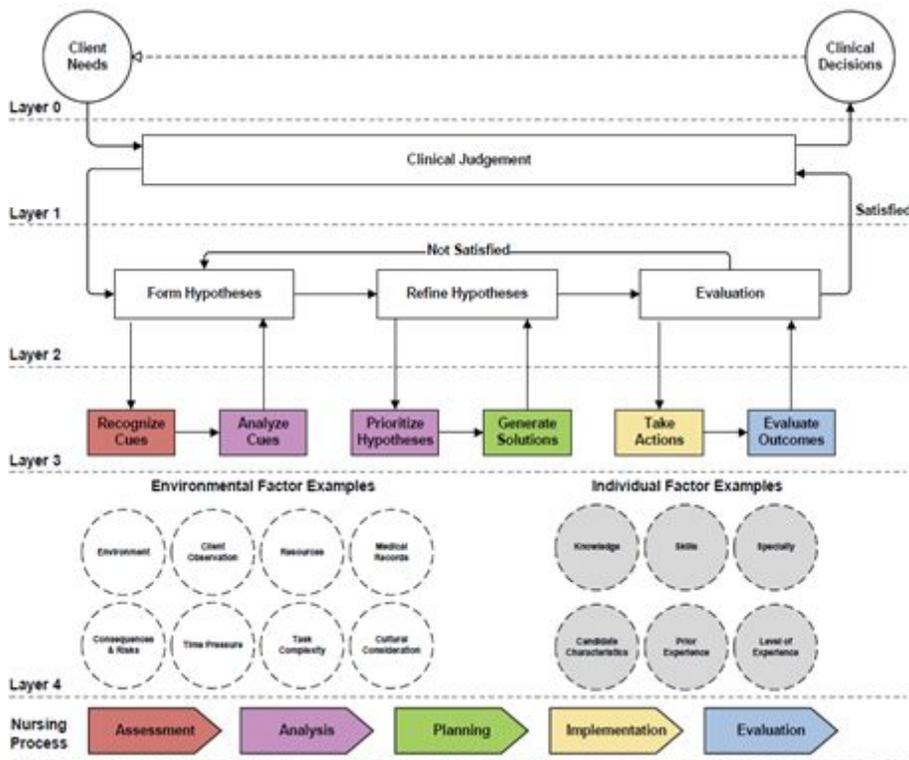
One way that NCSBN has been able to understand the learning of NCJ is via the CJMM. The CJMM is a mental model of clinical judgment—importantly, the conceptual model of NCJ “discusses what to measure but not how to measure” (Next Generation NCLEX® News, 2019). That’s why the CJMM was developed as an assessment model—to interpret the CJMM in psychometric terms and develop a foundation in which other models (e.g., task, scoring, mathematical models) can be further advanced.

The CJMM is a complex model with several layers, as pictured below. Layer 0 is the highest level that includes the client needs and clinical decisions. Layer 1 conceptualizes the clinical judgment, and Layer 2 addresses the forming, refinement, and evaluation of the given hypotheses. Layer 3 discusses the cognitive operations and implementations that must take place (e.g., recognizing and analyzing cues, taking actions). Layer 4 takes into account environmental and individual factors. Each of these layers has several phases, including: assessment, analysis, planning, implementation, and evaluation.

Cognitive operations (which we have talked about above) are important, primarily in Layer 3 (Sanders and Goble, 2020). Nurses must first assess the situation, recognizing cues (e.g., indicators such as temperature, symptoms, etc.). They must then analyze the cues, organizing and linking the information to the client’s clinical appearance, to figure out the client’s needs and problems. The nurse should develop one or more hypotheses, and evaluate



and rank these hypotheses in terms of risk and urgency. They must generate solutions and identify interventions, and then take action to implement solutions for the highest priority issues. Once this has been done, the nurse should compare the observed client outcomes to the expected outcomes.



Next Generation NCLEX® (NGN)

NCSBN is currently conducting research projects to determine the ability of current and potential innovative items to assess NCJ in accordance with the CJMM. Such research has identified the assessment of higher-order cognitive constructs as one area that is highly desired in nursing yet can be challenging for many practitioners (Dickison et al., 2016).

These higher-order cognitive constructs have been difficult to capture psychometrically, but emerging research shows that NGN test items have



emerged as one way to test higher-order cognitive constructs which are used in NCJ (Sanders and Goble, 2020). NGN test items, which we will discuss in the next sections, will be included in both RN and PN NCLEX® exams but not before 2023. However, for the time being, the NCSBN has started to adapt existing test items to fit the new NGN guidelines, which rely on the CJMM to test clinical judgment.

NCSBN Question Types

Assessing NCJ is a goal of the NCLEX®, but at the present moment, it is only tested indirectly. NCSBN’s CJMM supports existing theoretical educational frameworks used in nursing education. By using sound psychometric qualities, higher-order cognitive constructs, such as NCJ, can be measured (NCSBN, 2020). That’s why the NCSBN has proposed NGN items to better be able to assess NCJ.

The primary way that NGN questions will probe NCJ is via case studies. This is similar to “unfolding scenarios” that are common in nursing education today. In these case studies, the body of information is presented, followed by six related questions. Each question will test an important element of NCJ. Several new question types have been developed which incorporate NGN standards for testing NCJ (Sanders and Goble, 2020).

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Measuring Nursing Clinical Judgment with New Item Types on the NCLEX®

Current item types on the NCLEX® include multiple choice, multiple response, drag-and-drop (i.e., ordered response), hot spot, audio, graphics, and exhibit. Research into the NCLEX® and nursing field indicates that NCJ is only indirectly tested in the current version of the exam, though it should be a goal of NCLEX®. As discussed in the previous sections, NCJ is an outcome of critical thinking and decision making using nursing knowledge, which is not sufficiently tested on the nursing licensure exams. This deficiency, identified



by research, has paved the way for the development of the new NCLEX® NGN items.

The beginnings of the NCLEX® NGN items came about in 2012 and 2015 when the NCSBN wanted to know whether the NCLEX® was testing the correct things to ensure nurses' success in the workforce. As a result, the new NGN item types are supported by two comprehensive research studies that conducted both functional and strategic job analysis. The 2012 functional job analysis of RNs looked at 2,522 subject matter experts in 24 practice settings in all 4 geographic regions, with tenure ranges of zero to 45 years in nursing. A 2015 Strategic Job Analysis of RNs looked at 90 subject matter experts in 20 practice settings in all 4 geographic regions in 33 states with tenure ranging from two to 45 years. The top three areas identified from this research were clinical judgment (i.e., NCJ), professional communications, and active listening.

The figures below demonstrate the distribution of NCJ skills in current item types and the new NGN item types. Red indicates that the skill is not covered, yellow indicates that the skill is marginally covered, and green indicates that the skill is tested. The clinical judgment domain distribution for existing items is largely incapable of assessing any proficiency in the time pressure, interruption, and task complexity domains.



Current NCLEX Item Bank:

Clinical Judgement Domain Distribution

	Cue Recognition	Hypothesis Generation	Communication	Consequences and Risk	Task Complexity	Time Pressure	Distractions and Interruption
Multiple Choice	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red
Multiple Response	Yellow	Yellow	Yellow	Green	Yellow	Red	Red
Drag and Drop	Yellow	Yellow	Red	Yellow	Yellow	Red	Red
Hot Spot	Yellow	Yellow	Red	Yellow	Yellow	Red	Red
Audio	Green	Yellow	Yellow	Red	Red	Yellow	Red
Graphic	Yellow	Yellow	Red	Red	Yellow	Red	Yellow
Exhibit	Green	Red	Red	Red	Red	Red	Red

On the other hand, the new NGN item types have a much better distribution of assessment of NCJ. One shortcoming remains in testing the prioritization of hypotheses using matrix questions, but otherwise, all six clinical judgment domains identified by the NCSBN show excellent testability with NGN items.

New NGN item Types: Clinical Judgement Model Domain Distribution

	Recognize Cues	Analyze Cues	Prioritize Hypotheses	Generate Solutions	Take Action	Evaluate Outcomes
Cloze	Green	Green	Green	Yellow	Green	Yellow
Enhanced Hot Spot	Green	Yellow	Yellow	Yellow	Yellow	Green
Extended Drag and Drop	Green	Green	Green	Green	Green	Green
Extended Multiple Choice	Yellow	Yellow	Green	Yellow	Green	Yellow
Extended Multiple Response	Green	Green	Green	Green	Green	Green
Matrix	Yellow	Green	Red	Green	Green	Green



When Will NGN Items be added to the NCLEX®, and What Will This Look Like?

The release of NGN items is targeted for the April 2023 NCLEX® and will affect both RN and PN exams. The test will be a mix of NGN items and current NCLEX® items. New items will be presented in a split screen format, and the electronic health records will contain both relevant and irrelevant data. Each case scenario will have six items, and every candidate will receive two to five cases in the first 60 credited questions, for a total of 12 to 30 NGN items. Matrix questions will either have one possible answer or more than one possible answer, which will be indicated by the response format—rows with radio buttons will have only one possible answer, while rows that contain boxes will signify that there may be more than one possible answer.

Per NCSBN, The Special Research Section will become available to PN students later in 2020. There will be partial credit for all question types, except knowledge level, but scoring is still being decided, and software is currently under development to test and score NGN items.

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What Kaplan is Doing to Prepare for NGN?

Kaplan is engaged in regular communication, covering news and updates in real time. Free resources for faculty regarding NGN are available, including Kaplan's NGN website. Kaplan is writing NGN-style questions and is leveraging available technology to develop working prototypes. Kaplan is hosting a series of webinars, including an NGN Item Writing Workshop. The workshop helps faculty to assess current items, understand the CJMM and how to construct NGN items, and how to transform existing items to NGN-style items.

Kaplan also has the Kaplan Decision Tree, a critical thinking model that prepares students with the skills needed to demonstrate NCJ on Test Day. Kaplan is, furthermore, researching the best time and methodology to introduce the Kaplan Decision Tree earlier in nursing school education to



improve student outcomes on the NCLEX®. Kaplan's i-Human Patients decision-making model is specifically designed to be integrated with NGN.

New NGN Item Writing

Effective writing of NGN items can help distinguish nursing students who understand the content from those who do not, because it focuses on important information which contributes to NCJ.

1. Select the test objective.

The first step in writing an NGN test item is to select the test objective. Objectives are typically based on specific behavioral objectives of the course. The objective should specify one task, skill, or concept that is behaviorally specific, results-oriented, and within the student's area of knowledge or responsibility. Keep in mind the hierarchies present in Bloom's taxonomy—remembering, understanding, applying, and analyzing information. All of these different levels will need to be tested in some way.

2. Write the stem.

Write the question stem based on the behavioral objective. The question stem should contain relevant information and be formatted properly to distinguish qualifier words to support critical thinking. The stem should not attempt to "teach" students or contain information that is irrelevant to determining the question's answer.

3. Write the answers.

The third step in writing a test question is to write a correct answer. Answer choices should be mutually exclusive, avoid unnecessary wording, and help students choose the right answer based on their knowledge and NCJ, not due to the way that answer choices are phrased.



4. Write distractors (incorrect answers).

Distractors are the final step in the item writing process. Distractors can be diagnostic, pointing to a student's lack of knowledge. They can also be a predictable error, a common misconception, a clinical error, an incomplete but related idea, or a common procedural mistake. Distractors should be realistic, inviting, and well-written—not tricky or meant to trip up the student, but rather, to illuminate gaps in learning.

New NGN Item Types

The new NGN item types are:

- **Cloze items** in which the applicant completes sentences or information in a chart by choosing a word or words from a dropdown list.
- **Extended Multiple Response items** in which up to 10 options are available. Only 1 option may be correct, more than 1 option may be correct, or all options may be correct. Before answering the question, the applicant may have to read a passage first.
- **Extended Drag-and-Drop items** in which the applicant uses the "drag-and-drop" function to complete different scenarios. For example, the applicant may be given a list of potential steps that could be taken to treat a client's condition. The applicant then would place steps that are appropriate in the next column. Current drag-and-drop items on NCLEX® primarily ask the applicant to arrange steps in a sequential order (e.g., the correct sequence of steps when inserting a nasogastric tube). NGN drag-and-drop items may ask the applicant to "drag-and-drop" clients that require private rooms or to "drag-and-drop" words that appropriately complete a sentence.
- **Enhanced Hot Spot items** in which the applicant would, for instance, highlight findings that require follow-up by the nurse or health care provider.



- **Matrix/Grid items** in which the applicant assigns a value to a group of responses (e.g., whether the action is indicated, non-essential, or contraindicated).

Items seek to answer the following questions:

- **Can students recognize clinical cues?** In other words, can they identify the most important information?
- **Can students analyze cues?** In other words, can they distinguish the most important information?
- **Can students prioritize hypotheses?** That is, can they synthesize important information to determine client needs?
- **Can students generate solutions or develop possible care options that align with client needs?**
- **Can students identify and perform the appropriate clinical actions?**
- **Can students evaluate outcomes and determine the effectiveness of interventions they have deemed appropriate?**

Existing test items can be adapted to fit NGN guidelines.

How Can Nursing Classrooms Integrate Lab, Classroom, and Clinical Judgment?

Laboratory, clinical, and classrooms must integrate instruction to best be able to cultivate NCJs in nurses. Critical thinking, clinical reasoning, and clinical judgment are all essential to success in nursing. These skills can be inculcated in the classroom, as well as in the clinic or lab.

Examples of critical thinking involve interpretation, understanding, and analysis of data; investigating plans of action based on available information; and evaluating the value, relevancy, reliability, and credibility of information available about a client's condition. Critical thinking in the classroom or



lab/clinic can be taught via case studies, concept mapping, open-ended questions, communication, faculty role modeling, and other methods.

Clinical reasoning involves explaining, self-regulation, and using critical and reflective thinking to identify client conditions and any changes. In the classroom, this can take the form of teaching peers, leading discussions, engaging in reflective writing activities and debates, problem solving, working on case studies, and so on. In the lab/clinic, Socratic questioning, reflective thinking, simulation, and other hands-on methods can help improve clinical reasoning skills.

Clinical judgment, which we have talked about at length, pertains to recognizing cues, making and testing hypotheses, prioritizing, taking action, and exploring consequences, risks, complexities, time constraints, and forecasting future needs and concerns. Clinical judgment can be imparted in the classroom using active learning strategies, case studies, problem solving, and other methods. In the lab/clinic, it can be taught via asking questions, performing exercises and simulations, and comparing and sharing cases of many different clients with a similar diagnosis.

Clinical reasoning involves explaining, self-regulation, and using critical and reflective thinking to identify client conditions and any changes.

Critical thinking, clinical reasoning, and clinical judgment can all be evaluated in a variety of ways. NCJ, in particular, can be tested via rubrics, concept mapping, essays, simulations, electronic health records documentation, and examinations, such as the NCLEX® NGN test items.

In the classroom, students say they prefer lectures, whether in person or online. However, students actually perform better on the NCLEX® when lecture is combined with student activities. Therefore, student satisfaction may not be an effective measure of student learning.



Conclusion

Novice nurses are most prone to make errors, and research shows that they provide a lower standard of care. As a result, their supervisors report reduced job performance satisfaction. In some respects, experience can improve client outcomes, but nursing education programs must play an active role in working to improve the standard of care and make it less difficult to perform optimally in the clinic without having to obtain many years of experience. This will help improve client outcomes and improve performance of nurses new to the job.

The NCLEX® licensure exam is the final step in obtaining a nursing education, and passing the RN or PN version effectively means that a nursing student is authorized to practice nursing. However, limitations in the existing NCLEX® mean that what is being tested may not accurately reflect what is being learned, and, furthermore, there is a gap between test results and actual performance on the job. Higher-level cognitive skills, such as NCJ, are needed on the job, but they are currently not directly tested on the NCLEX®, which represents an oversight that NCSBN is working to remedy. For this reason, the NCSBN has developed a new category of test items called NGN, which seeks to test NCJ.

These new NGN items have been developed based on research into theoretical factors underlying competencies, and ways to model them psychometrically. NGN items have been derived from both clinical assessment and empirical research and have identified higher-level cognitive thinking processes which require the collection, synthesis, analysis of information, and developing and testing of hypotheses, to provide the best standard of care. NCSBN's goal is that NGN items will boost the efficacy of the licensure exam to predict on-the-job success.



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