HESI® Assessments and Policy Considerations: Finding a Happy Medium

HESI® ASSESSMENTS AND POLICY CONSIDERATIONS: FINDING A HAPPY MEDIUM

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Research over the past 20 years demonstrates that the HESI Exit Exam (E2) is predictive of NCLEX-RN® success. (Barton et al., 2014; Riley & Gouveia, 2022; Nibert & Morrison, 2013). The most current HESI validity study (Shah et al., 2022) demonstrates that students scoring 900 and above had an NCLEX-RN pass rate of 97.29%. Students who achieved an average E2 score of 850 and above had an NCLEX-RN pass rate of 96.33% (43 programs provided NCLEX-RN outcome information for 3,686 students that took the E2 in 2018-2019).

HESI® exams are continually evaluated and modified to align and reflect the NCLEX® test plan (National Council of State Boards of Nursing [NCSBN], 2019). The E2 is a comprehensive exam usually administered near the end of the nursing curriculum to help determine a nursing student's readiness for the NCLEX, among other uses within the program. The E2 includes 150 scored items and ten pilot items. The item types and cognitive level (application level or higher) mimic the NCLEX. Item difficulty ranges from .40 to .95, and each item reliability estimate should be 0.11 or better (Vesey & Brunnert, 2018).

Exam questions are written by nurse educators trained in NCLEX item-writing style. All items are reviewed in a quality control process to ensure that they meet standards in item writing style including removing gender and cultural bias and stereotyping. At least a third of the items on each exam are reviewed and replaced three times a year. Specialty exams are written based on nursing programs' core curricula, competencies, and the NCLEX test plan. Exit and specialty exams are built to reflect established blueprints. The blueprint for the Exit Exam (E2) includes content specifications, Client Need Categories, item types, and item property goals such as difficulty and reliability. The blueprint for the exit exam is based on the NCLEX exam Client Needs content categories and the content is similarly proportioned.

Exams, including standardized exams, may be assigned grades or other consequences. The American Educational Research Association defined high-stakes testing as "a test used to provide results that have important direct consequences for individuals, programs, or institutions involved in the testing" (p. 219). Further defined is low-stakes testing which has "minor or indirect consequences for individuals, programs, or institutions involved in testing" (p. 221). Additionally, the National Council on Measurement in Education (2012) defines standardized high-stakes examinations as a test with results that have critical consequences for the test-takers and the institutions that cultivate the knowledge and skills being assessed on the exam. The actual weight or grade that is considered high stakes is not numerically defined and is subjective.

According to the National League for Nursing, the way in which exams are used in program policies is defined as the concern:

> "It is the high-stakes use of commercially available, standardized nursing achievement exams, and specifically those exams designed as 'exit exams' or 'NCLEX predictor' exams, to prevent program completion, graduation, or in some other way deny eligibility to take the licensing exam – that is most concerning to the NLN and is, therefore, the subject of this Vision Statement (p. 2)."

Some key recommendations from this document include but are not limited to the following (p. 7):

- Multiple sources of evidence are required to evaluate basic nursing competence. Multiple approaches for assessment of knowledge and clinical abilities are particularly critical when high-stakes decisions (such as progression or graduation) are based on the assessment.
- Tests and other evaluative measures are used not only to evaluate students' achievements, but, as importantly, to support student learning, improve teaching and guide program improvements.
- Comprehensive testing, administration, and evaluation information must be readily available to faculty before they administer, grade, and distribute results from, or write policies related to, the use of standardized tests. Faculty have the responsibility to review and understand the technical specifications of the standardized exams being used and to incorporate as much of this information as possible into communications with students about standardized testing and its consequences.
- Teach students about the purpose of the tests, student-level factors that affect the results and the testing methods used within a program.
- Review standardized testing practices and progression policies base on test results to ensure alignment with accepted fair testing practices.

*Please see the NLN Fair Testing Guidelines and Fair Testing Imperative documents linked in the reference list for the comprehensive recommendations for more detailed recommendations.

The authors of this paper and the Elsevier nursing education team concur with the NLN guidelines. Standardized tests do not create the high-stakes environment. It is the program policy developed by faculty on standardized tests that may cause a negative impact. Factors that create negative impact include high grading weight or consequence and/or a benchmark established that limits course or program progression or denying the ability to take licensure exam. Instead, the authors of this paper will review the positive aspects of HESI testing, literature that supports its use, and provide recommendations for fair and effective practices to implement testing.

LITERATURE REVIEW

In a literature review on high-stakes testing in nursing education, Hunsicker and Chitwood reviewed the nursing literature. Additionally, 50 state board of nursing websites were reviewed and 13 included mentions of high-stakes testing. Common themes were identified (Hunsicker & Chitwood, 2018). High-stakes testing definitions vary but it is generally described as a test used to make important decisions or lead to important consequences. Testing that is the sole determinant of progression is considered high stakes. Faculty must carefully make decisions in considering exam consequences and the grade or weight applied to exams. Occasionally a board of nursing has defined a standard for the state on how commercial or vendor nationally normed exams may be implemented in a nursing program. Hunsicker and Chitwood included a review of state boards of nursing recommendations and restrictions regarding testing.

In a comprehensive article covering the evidence and arguments surrounding standardized testing as an assessment of student readiness for NCLEX (Smith-Glasgow et al., 2019), the authors support standardized tests that are well developed, psychometrically sound, and valid and reliable. Issues of concern with standardized testing in nursing education are raised when the exams are used as a high-stakes exam. Nursing programs can include standardized testing as a course requirement but not a sole barrier to progression and graduation. Smith-Glasow et al. note that standardized tests can provide valuable data to consider in program evaluation.

Improved outcomes were identified in individual nursing programs that included HESI assessments. Cobbett et al. (2016) in a convenience sample of nursing graduates from a university in a Canadian province determined that there was a significant difference in HESI Exit Exam (E2) scores and CAT Exam scores for graduates who passed the NCLEX-RN exam and those who didn't pass the NCLEX-RN exam. The average HESI E2 score for students who were successful versus those who were not successful was greater than 200 points when comparing the two groups. Also, this study concluded that students who had a longer period from graduation to time of NCLEX were less likely to be successful than those taking the exam sooner.

In a study conducted by Homard (2013) in a baccalaureate program, student performance in cohorts with varying degrees of standardized testing utilization was analyzed. Cohorts consisted of three groups: 1) students who did not participate in standardized testing in their program, 2) students who participated in utilizing the standardized testing for two semesters, and 3) students with four semesters of testing utilization. NCLEX-RN pass rates were significantly higher for students in the third group who were able to practice their test-taking more consistently. NCLEX-RN pass rates were significantly higher for cohort 3 (86%) compared with cohort 1 (73%) and cohort 2 (59%).

Johnson et al. (2017) determined that the strongest factor correlating with NCLEX success in a retrospective study of data from students in a baccalaureate program was the HESI Exit Exam. The higher the score, the more likely students would pass the NCLEX-RN. Of note, students who performed better in certain HESI course exams were more likely to perform better in their exit exam. This data-guided faculty in developing strategies to improve exit exam success. New strategies included students developing individual study plans to address their content area of weakness identified by their specialty exam and exit exam results. Additionally, faculty strategically held group remediation sessions targeting weak content areas and a focus was placed on supporting students with test-taking strategies.

Havrilla et al. (2018) developed a comprehensive mentoring program with a faculty member assigned to eight to nine students each. HESI scores and NCLEX-RN first time pass results were monitored. A significant correlation was demonstrated between exit exam scores and students passing the NCLEX-RN exam on the first attempt.

In a retrospective study including 671 students, analysis was completed to determine predictors of NCLEX success (Kim et al., 2019). The exit exam was identified as a significant predictor of NCLEX-RN success. The odds ratio for the exit exam was 2.18 with a 95% CI in this study, "suggesting that those who scored above or equal to the average of HESI testing are two times more likely to pass the NCLEX than those who scored below the average" (Kim, p. 36-7, 2019). Additionally, students who did not achieve a score of 850 in the exam participated in an individual remediation plan and then retested. The authors suggest identifying students who may need more educational support for early intervention. Support options include remediation, utilizing practice tests, building test-taking strategies, and tutoring.

March and Ambrose (2010) developed a planned approach to support and facilitate NCLEX-RN success. Multiple strategies included individualized attention, development of a study plan, and enhancement of critical thinking skills. Faculty determined that a HESI score of 850 was acceptable for the exit exam, and students not achieving that threshold developed a study plan based on their exam content category scores. Faculty provided feedback on the plan. Students completed another exit exam. This approach improved first-time pass rates on the licensure exam.

COMPREHENSIVE CHANGE AND HESI EXAM DATA

Czekanski et al. (2018) implemented a comprehensive, evidence-based approach to improve first-time NCLEX pass rates. A subcommittee developed standardized testing and progression policies, and faculty were guided in improving item writing and item analysis. A full-time tutor and retention coordinator were hired, along with a plan to assist at-risk students. HESI Specialty and Exit Exams were used throughout the program, and exam data was used to help evaluate content areas to target for improvement. Data-driven strategies improved first-time NCLEX pass rates by 30%. The authors concluded that no one revision is key to program success. Instead, a multipronged approach that includes addressing student factors, faculty development, curriculum analysis, and curriculum revision is essential.

A faculty focus group identified potential areas of weakness in their curriculum. A correlation was found to low-performance areas identified in the HESI Exit Exam and HESI Leadership Exam data (Serembus, 2016). This program developed a continuous assessment and plan to improve first-time pass ranges. First-time pass rates increased from 73% to 96% and remained in the 90% range for the length of the project (three years).

Implementing a standardized testing program into a nursing curriculum can be challenging and multifaceted (Smith & Meyer, 2021). A comprehensive plan and policy for standardized testing product integration was developed to improve student preparation for NCLEX-RN. Significant improvement was found in cohort mean scores in all standardized assessment exams.

NUMBER OF SPECIALTY EXAMS AND SUCCESS

Sportsman (2020) authored a white paper after researching and analyzing a total data set of over 1 million nursing students from 700 nursing programs who utilized HESI Specialty Exams and then took the E2 exam. Compiled were over 1,000,000 exams. The findings indicated that students who tested with specialty exams improved on their E2 exam. In fact, the more specialty exams that the student took, the better their E2 exam score. The findings show that students who took 12 exams had an approximately 150-point higher score on the E2 than those who took no specialty exams. This ensures that faculty can be confident in giving many different content specialty exams to ensure the student's ability level. This information can also be used by faculty to identify at-risk students. Remediation policies should also be developed and utilized as they "play a key role in the success of the students on the NCLEX-RN examination" (p. 6).

FOCUSED REMEDIATION

An important theme identified in the literature is identifying high-risk students early and providing timely remediation. Hooper and Ayers (2017) identified this key factor in a review of 88 nursing programs' self-study reports. This early identification of at-risk students was also found in a literature review of 25 studies in the nursing education literature (Mee & Schreiner, 2016). Many programs use standardized tests to identify high-risk students early and provide remediation specific to individual student content areas of weakness. Additionally, these test results are used to identify cohort content areas of concern that can be targeted for group remediation efforts or prioritizing curriculum improvements. In a study on HESI exams, E2 scores were found to be higher in schools with consequences for not achieving designated threshold scores and in those schools that required remediation (Lauer & Yoho, 2013).

Gannon-Tagher and Robinson (2015) interviewed six students with open-ended questions to elicit responses about their testing experience when a benchmark threshold was set as a graduation requirement. Stress levels increased in students. The authors recommend that faculty help students understand the benefits of standardized testing as an opportunity for success and learn about their strengths and weaknesses in content categories. Clear policies throughout the program for testing and remediation can help facilitate positive outcomes and decrease student stress and anxiety around testing.

RECOMMENDATIONS FROM THE NURSING EDUCATION TEAM AT ELSEVIER

The Nursing Education Team at Elsevier has the following recommendations based on the peer-reviewed literature on standardized testing, as well as best practice recommendations and discussions with faculty who have reported improved program outcomes by using HESI testing. Refer to the HESI Implementation Guide for more details and you can request a consultation with a Nursing Education Specialist to discuss the below recommendations in more detail.

1. NLN Fair Testing Guidelines

The team supports and shares in the principles of the *NLN Fair Testing Guidelines for Nursing Education and the Fair Testing Imperative in Nursing Education*, a Living Document from the National League for Nursing. We recommend reviewing these guidelines when developing testing policies.

2. Positive Testing Culture

Establishing a positive testing culture helps students recognize the value of testing for both faculty-made and standardized testing. A positive testing culture can affect student performance and motivation. If faculty see value in the assessments and communicate that positive value, it can impact student exam preparation and remediation efforts post-exam. Reinforce with students the value of the exam in identifying their content areas of weakness so that they can better target future study efforts. Faculty need to instill knowledge about the value of HESI exams early so students see the positive benefits. Students otherwise may view the exam as punitive. Faculty that do not express value for the exam and say example, "let's just take the test and see how you do," may not inspire students to take the exam seriously or do their best. A positive testing culture and real discussion with students is critical and can't be overstated.

3. Consequences and Student Motivation

Students are motivated by grades or consequences to perform their best on an exam. For example, students might randomly click through an exam without a consequence. Fair and balanced consequences can motivate students to perform well and should be communicated to students in policies and course syllabi. Anecdotally, faculty have reported that an exam weight of 5% or less yielded undesirable results, and in some cases, students did not perform to their potential.

The Elsevier Nursing Education Specialist's recommendation is that a HESI Specialty Exam or Exit Exam should be weighted similarly to other exams in the course. A consideration may be to weight the HESI exam the same as or similar to a midterm or final exam. The NLN guidelines do not recommend a specific grade or weight for exams. Many programs have reported a HESI exam weight of 10-15% with good outcomes. Higher grading percentages in the 40-75% ranges have been reported, however, based on the NLN guidelines this weight may be interpreted as excessive and can be considered not meeting the standard for fair and balanced grading across all assessments in a course or curriculum.

Setting a benchmark or consequence that is considered high stakes might make students more likely to consider academic dishonesty. An exam score that alone prohibits student progression or graduation or that is required for authorization to sit for a licensure exam is considered high stakes and not recommended by the Elsevier Nursing Educators.

On the other hand, an exam worth no points or grade could yield inaccurate program assessment data and demonstrates a lack of value. If this is the only choice due to State Board of Nursing restrictions, then testing and or remediation could be used to improve a student's grade but have no detrimental effect on the grade. Other more positive motivators include a reward system that could include awards or special recognition.

4. Individualized Targeted Remediation

Elsevier provides extensive targeted remediation in multiple learning modalities for all specialty and exit exams. This remediation is individualized to each student's content areas of weakness. Faculty can use the cohort report to help identify weak content areas for group remediation activities. If satisfactory scores are not achieved in HESI exams, consider requiring specific remediation and follow up with taking another version of the exam. Remediation requirements can be tiered based on a student's score; for example, lower-performing students have more remediation requirements to complete. Students can be directed to target their study efforts on content areas of weakness.

Retesting for not meeting a threshold is another consequence to consider. Students who meet a threshold avoid taking another version of the exam. This consequence may result in higher first-time test scores.

A second proctored exam (a different version) is the most accurate way to assess if remediation has made an impact. Consider including a remediation requirement with parameters. For example, if students do not complete the requirement, consider a 10% reduction to the grade. Use a point system with students getting extra points for remediation activities or deducting points for not completing remediation. This helps put weight on the remediation activity. Students could also be denied the opportunity to take a second version if required remediation isn't completed.

When possible, the nursing education team recommends using two versions of a specialty or exit exam. This provides students with the opportunity to remediate after the first version and improve their score on the second version.

5. Test Preparation

A focus on test preparation is important. Elsevier provides HESI practice quizzes and tests, HESI Case Studies, and Elsevier Adaptive Quizzing (EAQ) as some options to strengthen student content knowledge, critical thinking, and clinical judgment in preparation for any specialty or exit exam. In addition to these resources, students can also utilize remediation from their specialty exams as part of their preparation for the E2. Preparation with these resources will also improve performance on faculty-made exams.

6. **Identify High-Risk Students Early**

    A very important aspect of students taking specialty exams is identifying students who are struggling or at risk for failure early in the program. Early strategic intervention can improve student success and decrease attrition.

7. **HESI Exams**

    Specialty exams provide practice and remediation. There is evidence that the more specialty exams that a program uses the better the exit exam score for their students (Sportsman, 2020). The exit exam test blueprint uses the same range of percentages as Client Needs categories in the NCLEX exam. When NCSBN makes NCLEX changes, Elsevier/HESI changes their exams to match the NCLEX.

8. **Data Analysis**

    The exit exam is a reliable and valid measure of NCLEX success. Nursing programs can utilize the evidence from HESI exam content categories to help prioritize content areas for change to help improve outcomes as is demonstrated in the literature. Continuous quality improvement initiatives should be based on evidence. Over time, analyzing cohort strengths and weaknesses in content categories and trends in data can help faculty prioritize content areas to address with improvement initiatives.

9. **Testing and Remediation Policies**

    Elsevier recommends that programs have well-developed testing and remediation policies. Policies should be published for students and faculty, and policies should be discussed with students throughout their journey as a nursing student—not just at one point in time. Faculty should implement the policies consistently to help students better understand expectations and requirements across the curriculum.

10. **Elsevier Education Support and Resources**

    Contact your solution consultant for more information on resources as you develop plans to implement HESI testing.

SUMMARY

In summary, HESI Exit Exams have over 20 years of extensive research supporting their reliability and validity (Elsevier Education, 2022). Elsevier and the Nursing Education team are not prescriptive when addressing HESI testing policies for nursing programs. Testing policies might include timing of exams, whether repeat testing is permitted, identification of a benchmark, and how the score fits into the course grade. Each school and its faculty must make thoughtful expert determinations on policies as one policy does not fit all programs. These policies should be supported by evidence in the nursing literature as well as guidelines published by nursing education organizations such as the NLN and in accordance with local board of nursing rules.

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