

Rethinking Theoretical Assessment in Undergraduate Nursing Education: Evidence-Based Best Practice Guidelines

Gabieba Donough

<https://orcid.org/0000-0002-4601-1851>

University of the Western Cape

2515710@myuwc.ac.za

Katlego Mthimunye

<https://orcid.org/0000-0002-3009-9254>

University of the Western Cape

kmthimunye@uwc.ac.za

Felicity Daniels

<https://orcid.org/0000-0003-4550-7887>

University of the Western Cape

fdaniels@uwc.ac.za

Abstract

The quality of theoretical assessments in undergraduate nursing education is crucial to shaping students' clinical reasoning, professional judgment, and overall readiness for professional practice. Despite growing emphasis on competency-based education, persistent challenges, including cognitive misalignment, inconsistent moderation practices, limited assessment literacy, and contextual constraints, continue to undermine the credibility and fairness of these assessments.

Aim: To develop and validate evidence-based best-practice guidelines to strengthen the design of theoretical assessments in undergraduate nursing education.

Methods: The study was conducted in two sequential phases. The first phase gathered, synthesised, and integrated evidence from a scoping review, moderation report analysis, qualitative interviews with nurse educators, and a student survey. This process generated 13 draft guidelines with 60 operational statements. A Delphi study was used in the second phase to establish expert consensus amongst 15 national and international nursing education experts on the guidelines and operational statements. Consensus was set at $\geq 80\%$ agreement on clarity, relevance, and applicability.

Results: All guidelines achieved consensus in the Delphi study. The validated guidelines emphasise the need for assessments based on cognitive taxonomy



Africa Journal of Nursing and Midwifery
Volume 28 | Number 2 | 2026 | #21887 | 16 pages

<https://doi.org/10.25159/2520-5293/21887>
ISSN 2520-5293 (Online), ISSN 1682-5055 (Print)
© The Author(s) 2026



Published by Unisa Press. This is an Open Access article distributed under the terms of the Creative Commons Attribution-ShareAlike 4.0 International License (<https://creativecommons.org/licenses/by-sa/4.0/>)

principles; constructive alignment to enhance theory-practice integration; adherence to core assessment principles; and institutional responsibility for educator development and quality assurance.

Conclusion: The guidelines provide structured guidance to enhance the validity, fairness, and contextual responsiveness of theoretical assessment design. When implemented, they have the potential to strengthen quality assurance processes and advance equitable, competency-driven nursing education in South Africa.

Keywords: Bloom's Taxonomy; constructive alignment; Delphi study; evidence-based guidelines; quality assurance; and theoretical assessment design

Introduction

Theoretical assessments in nursing education serve a dual purpose: they evaluate students' conceptual understanding and prepare them for the complexities of clinical reasoning and professional judgement in practice (Smith, Benbenek, and Petersen 2025). However, misalignment between assessment tasks, learning outcomes, and the cognitive level of questions remains a persistent problem across nursing education globally (İlaslan et al. 2023; dos Reis et al. 2022). Many assessments focus predominantly on lower-order cognitive tasks, limiting students' ability to demonstrate analytical, evaluative, and problem-solving skills essential for safe, evidence-based practice (Melnik and Fineout-Overholt 2022; Hui 2025; Boud and Bearman 2024).

Internationally, similar challenges in theoretical assessment design have been reported across both high- and low-resource contexts. Studies from Australia, Indonesia, Nigeria, and Turkey highlight persistent concerns regarding over-reliance on lower-order cognitive assessments, limited integration of theory and practice, and inconsistencies in assessment standards (Ajjawi et al. 2024; Lestari and Sirozi 2025; Fasanya, Negedu, and AbdulWaheed 2023; Köksal and Ulum 2018). In addition, the increasing shift towards competency-based education globally has intensified the need for assessments that not only evaluate knowledge acquisition but also measure clinical reasoning, judgement, and decision-making in authentic contexts (Villarroel et al. 2024). Despite these developments, a gap remains between assessment theory and its practical implementation, particularly in professional programmes such as nursing.

In the South African context, challenges such as inconsistent moderation practices, insufficient educator training in assessment design, and limited institutional support further compromise the effectiveness of theoretical assessment design (Prichard et al. 2024). Additional challenges, including linguistic diversity, large class sizes, and heavy academic workloads, further compromise both student performance and curriculum integrity (Donough, Daniels, and Mthimunye 2022). Despite a growing emphasis on outcomes-based education and competency development in nursing, there remains a lack of clear, practical, and evidence-informed guidelines to support educators in designing quality assessments.

Effective assessment in higher education is widely recognised as a cornerstone of teaching and learning quality, particularly in professional programmes such as nursing, where students must acquire both theoretical and clinical competencies (Dsilva 2024). When thoughtfully designed, theoretical assessments can serve as powerful tools to reinforce learning, foster critical thinking, and prepare students for the demands of clinical environments (Shohani et al. 2023). However, international evidence indicates that many assessments remain focused on recall rather than higher-order thinking, limiting the development of cognitive agility and clinical reasoning (Akib and Muhsin 2020; Ellis et al. 2023; Wong and Kowitlawakul 2020).

A taxonomy, such as Bloom's Taxonomy, provides a useful framework for addressing this issue by classifying learning objectives across hierarchical levels of complexity, from remembering and understanding to analysing, evaluating, and creating (Ergashevich 2024). Research suggests that scaffolding assessments across these levels promotes deep learning and ensures that students are challenged to progress cognitively throughout their training (dos Reis et al. 2022). Achieving this requires both educator expertise and institutional mechanisms to support structured assessment planning.

Equally critical is constructive alignment, a model introduced by Biggs (1996), which emphasises the coherent integration of learning outcomes, teaching activities, and assessments. Misalignment among these components can lead to surface learning and hinder the transfer of theoretical knowledge to clinical practice (Hecker et al. 2024). Studies have shown that integrated assessments, such as case-based questions, reflective journaling, and peer learning, enhance contextual understanding and help bridge the persistent theory-practice gap in nursing education (Luna-Aleixos et al. 2023; Ajjawi et al. 2020).

Foundational principles of fairness, validity, reliability, flexibility, and transparency also guide sound assessment design. Validity ensures that an assessment measures what it intends to measure, reliability ensures consistent grading, and fairness demands clear language and equitable mark allocation. These principles are especially vital in multilingual contexts like South Africa, where linguistic barriers and cultural diversity can influence assessment outcomes. Effective moderation further enhances reliability, yet inconsistencies in moderation practices remain a common concern in the nursing education literature (Prichard et al. 2024; Donough, Mthimunye, and Daniels 2025a).

The quality of assessment design is equally dependent on the development and preparedness of nurse educators. Several studies report that many nurse educators feel inadequately trained in assessment of theory and practice, often due to limited access to professional development and excessive administrative responsibilities (Villarroel et al. 2024; Chukwu et al. 2024). Time constraints and lack of structured institutional support further hinder educators' ability to design, review, and refine assessments (Abou Hashish, Alnajjar, and Rawas 2025; Stoltenkamp and Dankers 2023). Evidence indicates that professional development, mentoring, and collaborative curriculum

design can improve assessment literacy and enhance educator confidence (Chukwu et al. 2024; Jin et al. 2021; Calaguas 2023), provided these efforts are supported by coherent institutional policies and academic leadership.

Given these challenges, scholars have called for context-sensitive, evidence-based guidelines that translate assessment theory into actionable, practice-oriented recommendations tailored to specific educational settings (Paterson et al. 2020; Bennett and Abusalem 2024; Zickafoose et al. 2024). This need is particularly urgent in South African nursing education, where diverse student populations, transformation imperatives, and limited resources create a unique and complex teaching environment.

In response, this study developed and validated a comprehensive set of best practice guidelines and operational statements to strengthen the design of theoretical assessment in undergraduate nursing education. These guidelines integrate established educational frameworks with empirical evidence to promote assessments that are cognitively rigorous, pedagogically aligned, and contextually relevant.

Aim

To develop and validate evidence-based best-practice guidelines to strengthen the design of theoretical assessments in undergraduate nursing education.

Methodology

Study Design

This study followed a two-phase multi-method design. The European Society for Human Reproduction and Embryology (ESHRE) Guideline Development Model (European Society of Human Reproduction and Embryology 2018) was adapted to guide the study. Phase one comprised four complementary studies. Each study followed rigorous and context-appropriate research methods, including clearly defined sampling, data collection, and analysis procedures. Sampling strategies were primarily purposive to ensure inclusion of information-rich participants, documents, and literature relevant to theoretical assessment practices in nursing education. Data collection methods included systematic database searches and structured extraction tools (scoping review), retrieval and review of moderation reports (document analysis), semi-structured in-depth interviews with nurse educators, and a validated student survey instrument (Assessment Experience Questionnaire). Qualitative data were analysed thematically following established frameworks, while quantitative data were analysed using descriptive and inferential statistics to examine patterns in student experiences. Detailed methodological procedures for each component study are reported elsewhere (Donough, Mthimunye, and Daniels 2025b, 2025a; Donough, Daniels, and Mthimunye 2022).

Study 1- Scoping review: A systematic search of electronic databases was conducted to identify literature on theoretical assessment design in nursing education. Studies were

screened using predefined inclusion and exclusion criteria, and relevant data were extracted and analysed thematically.

Study 2- Document review: Internal and external moderation reports of theoretical assessments were purposively sampled and analysed using qualitative content analysis to identify recurring issues related to assessment quality, alignment, and standards.

Study 3- Qualitative interviews: Semi-structured in-depth interviews were conducted with undergraduate nurse educators using purposive sampling. Interviews were audio-recorded, transcribed verbatim, and analysed using thematic analysis to explore experiences and challenges in assessment design.

Study 4- Student survey: A structured questionnaire was administered to undergraduate nursing students to capture their experiences of theoretical assessments. Quantitative data were analysed using descriptive statistics.

Findings from these components were integrated through a process of cross-data comparison, coding convergence, and synthesis into horizontal concluding statements, which formed the foundation for the draft guidelines. Using educational frameworks such as Bloom's Taxonomy (Sobral 2021; Bloom 1956) and Biggs' Constructive Alignment (Biggs, Tang, and Kennedy 2022; Biggs 2003), thematic clusters were developed, resulting in 13 draft guidelines and 60 related operational statements.

A Delphi study was conducted in phase two to validate the draft guidelines and the 60 operational statements. A structured Delphi survey instrument was developed to enable panellists to evaluate each guideline and its associated operational statements in terms of clarity, relevance, and applicability. The instrument used a 4-point Likert scale (1 = not relevant, 4 = highly relevant) to avoid neutral responses and promote decisive expert judgement.

The process included a pre-test with three experts to evaluate the clarity, feasibility, and usability of the instrument. Minor refinements were made prior to full implementation. The main Delphi round involved 15 national and international experts in teaching, learning, and assessment. Most panellists were professors, held doctoral qualifications, and had extensive experience in health professions education, assessment, or academic quality assurance.

Consensus was predefined as $\geq 80\%$ agreement among panellists on each item. All 13 guidelines and 60 operational statements achieved consensus in the first round. The level of agreement was consistently high, with consensus levels ranging from 86.67% to 93.33% across the guideline statements, resulting in an overall mean consensus of 91.79%. Most items achieved near-unanimous endorsement across the three evaluation criteria (clarity, relevance, and applicability), indicating strong expert validation of the content and structure of the guidelines.

Feedback provided by panellists focused primarily on minor semantic refinements to improve clarity and contextual flexibility, e.g. replacing prescriptive terms such as “must” with “should.” These revisions were incorporated without altering the substantive intent of the guidelines. As all items met the predefined consensus threshold without substantive disagreement, additional Delphi rounds were deemed unnecessary.

Research Setting

The study was conducted at a nursing school within a higher education institution in South Africa. The institution offers both undergraduate and postgraduate nursing programmes and serves a large, diverse, multilingual student population within a resource-constrained educational environment. These contextual conditions present ongoing challenges for the design and quality assurance of theoretical assessments. This setting, therefore, provided a critical context for examining assessment practices and informed the development of context-responsive, evidence-based guidelines. The study specifically focused on the undergraduate Bachelor of Nursing programme.

Ethical Considerations and Trustworthiness

Ethical approval was obtained from the institution’s Research Ethics Committee (Reference No: HS20/8/19). Participation was voluntary, and informed consent was obtained. Anonymity and confidentiality were maintained throughout the process (Creswell and Creswell 2017).

Results: Guidelines and Operational Statements

The final output of the study consisted of 13 evidence-based best practice guidelines supported by 60 operational statements. These are grouped into four thematic clusters reflecting key areas in theoretical assessment design (Table 1).

Table 1: Clustered guidelines for theoretical assessment design

Clustered Guidelines	Description
Use of a taxonomy e.g. Bloom's, for scaffolding of assessments (Guidelines 1–2)	Emphasises the use of a taxonomy to ensure assessments are pitched at the correct cognitive level and scaffolded from lower- to higher-order thinking. This is to promote assessment of the development of students' critical thinking, problem-solving, and evaluative judgement.
Constructive alignment and theory-practice integration (Guidelines 3–4)	Advocate for assessments that align learning outcomes, teaching activities, and assessments. Scenario-based and reflective assessments are recommended to bridge the gap between theory and clinical practice.
Adherence to assessment principles and quality assurance (Guidelines 5–8)	Focuses on fairness, validity, reliability, and transparency. It addresses technical and linguistic clarity, diversity considerations, and alignment with internal and external moderation policies.
Educator development and institutional support (Guidelines 9–13)	Recognises the impact of educator competence, time constraints, and administrative workload on assessment design quality. It calls for institutional strategies to support professional development, workload management, and empowerment through training and mentorship.

Together, the validated guidelines integrate cognitive, pedagogical, and institutional dimensions of theoretical assessment design. The complete set of validated guidelines and operational statements, including the preamble, purpose, scope and relevance (Donough 2024), can be accessed through the following QR code:



QR code: Evidence-based best practice guidelines to strengthen theoretical assessment design in undergraduate nursing education

Discussion

The validated guidelines and operational statements offer comprehensive and evidence-based best practice guidelines to strengthen theoretical assessment design in undergraduate nursing education. The guidelines respond to persistent challenges in assessment quality, alignment, fairness, and educator readiness. Their implementation is expected to support competency development, enhance academic standards, and contribute to the broader goal of achieving Sustainable Development Goal 4 (SDG 4): Quality Education (Donough, Mthimunye, and Daniels 2025b; Daniels 2026). The discussion below interprets the significance of the guidelines in relation to key thematic clusters.

Use of a Taxonomy for Scaffolding of Assessments (Guidelines 1–2)

Results from phase one of the study revealed that many theoretical assessments disproportionately focused on lower-order cognitive tasks such as recall and comprehension. This restricted students' ability to develop higher-order cognitive skills essential for clinical reasoning, analytical thinking, and problem-solving. Guidelines 1 and 2, therefore, advocate for the structured use of taxonomies, such as Bloom's Taxonomy, to ensure that assessments are cognitively appropriate, progressively scaffolded, and aligned with the NQF level of the programme.

This recommendation aligns with research that supports the use of taxonomies to ensure that assessments move beyond rote recall and engage students in deeper levels of learning (Ergashevich 2024; dos Reis et al. 2022; Sobral 2021). By integrating taxonomy-informed design and reflective practices (e.g., peer review, mentoring, and reporting on cognitive levels), the guidelines offer a structured pathway for both novice and experienced educators to transform theoretical assessment from a testing mechanism into a pedagogical strategy that stimulates higher-order learning and clinical competence.

Constructive Alignment and Theory-Practice Integration (Guidelines 3–4)

A critical finding from the study was the lack of alignment between learning outcomes, teaching activities, and assessment tasks. This misalignment contributed to a persistent theory-practice gap, where students often demonstrated theoretical understanding without being able to apply knowledge in real-world clinical contexts. Guidelines 3 and 4 address this gap by promoting constructive alignment, ensuring that what students learn, how they are taught, and how they are assessed are coherently linked.

This aligns with Biggs' (1996) concept of constructive alignment and later work by Hecker et al. (2024) and Villarroel et al. (2024), which emphasises the role of integrated and authentic assessments in bridging theory and practice. The inclusion of strategies such as case-based assessments, reflective journaling, and peer-review activities

resonates with research demonstrating that such methods enhance contextual understanding and learner engagement (Villarroel et al. 2024; Villarroel et al. 2020).

When constructively aligned, assessments move beyond knowledge testing to become vehicles for applied learning. Alignment ensures that students demonstrate not only conceptual understanding but also contextual application. In this way, constructive alignment strengthens knowledge transfer and supports the development of clinically competent graduates.

Adherence to Assessment Principles and Quality Assurance (Guidelines 5–8)

The third cluster of guidelines reinforces foundational principles of assessment, validity, reliability, fairness, and transparency, while addressing practical aspects such as technical quality, language clarity, and moderation. Results revealed frequent inconsistencies in mark allocation, unclear criteria, and linguistic complexity that disadvantaged students, particularly those for whom English was an additional language.

These results echo concerns raised in international assessment literature that fairness and validity are compromised when assessment tasks lack clarity or inclusivity (Irenka and Ireland 2021; Villarroel et al. 2020; Bazvand and Rasooli 2022). The guidelines, therefore, advocate for the use of structured rubrics, cognitively aligned and plausibly constructed questions, and systematic bias review processes to enhance reliability and fairness. They also call for regular alignment with institutional and external quality assurance frameworks (Mosabala 2025; Donough, Mthimunye, and Daniels 2025a).

Furthermore, these guidelines highlight inclusivity by recognising diverse student needs, advocating for plain-language design, and providing reasonable accommodations. Such practices align with global quality assurance standards that view inclusivity as central to assessment integrity (Bennett and Abusalem 2024; Shivshankar 2024). These guidelines reinforce the technical and ethical dimensions of assessment design, positioning fairness as a core pedagogical responsibility rather than a procedural requirement.

Educator Development and Institutional Support (Guidelines 9–13)

A key systemic finding of this study is that assessment quality is inseparable from institutional context. Participants identified heavy administrative loads, limited training opportunities, and a lack of institutional support as major barriers to assessment quality. Guidelines nine to 13, therefore, extend beyond individual educator responsibility, calling for institutional commitment to empowerment, workload management, and professional development.

This resonates with Boud and Bearman (2024), who argue that sustainable assessment improvement requires institutional culture change, not just educator skill enhancement.

Similarly, Chukwu et al. (2024) and Villarroel et al. (2024) emphasise that assessment literacy must be continuously developed through mentorship, peer learning, and reflective practice.

These guidelines propose practical mechanisms such as educator workshops, peer-review systems, and designated time allocations for assessment design (Mallari, San Juan, and Li 2023; Xavier and Meneses 2022; Scaled Agile Framework 2021; Zickafoose et al. 2024). By doing so, they advance a systemic model of quality assurance where educators are supported as reflective professionals rather than overburdened implementers. This final cluster is crucial because it recognises that fair and rigorous assessment design cannot occur in isolation. It demands an enabling environment where institutional leadership, policy, and resources work in tandem with educators' professional agency to sustain excellence in assessment practices.

Synthesis and Implications

Collectively, the validated guidelines strengthen theoretical assessment practices across cognitive, pedagogical, and institutional domains. For nurse educators, they provide actionable strategies to enhance assessment fairness, validity, reliability, and transparency while supporting alignment between intended learning outcomes and student learning experiences. They help bridge the gap between theory and practice, as well as between educator intent and student experience.

For institutions, the guidelines offer direction for embedding quality assurance within curriculum design and staff development. For policymakers, they contribute to national and global discussions on the professionalisation of teaching and learning in higher education, aligning with the goals of SDG 4.

Although developed within a single institutional context, the guidelines were validated by an interdisciplinary panel of national and international experts across health professions education, academic quality assurance, and allied disciplines, strengthening their conceptual transferability to comparable undergraduate programmes.

Limitations of the Study

This study has several limitations. First, the empirical data informing guideline development were generated within a single institutional context, which may limit the direct generalisability of the findings. However, validation through a Delphi process involving national and international experts enhances the broader applicability of the guidelines.

Second, although the Delphi panel included experts from diverse professional backgrounds, the sample size was relatively small. While consistent with Delphi methodology, this may have limited the range of perspectives captured.

Third, the study focused specifically on theoretical assessment design and did not include clinical assessment practices, which are equally critical in nursing education.

Finally, although the study rigorously developed and validated the guidelines, their implementation and impact were not evaluated. Further research is therefore required to examine their effectiveness in improving assessment quality, student learning outcomes, and moderation practices.

Conclusion

These guidelines offer structured, context-specific, and evidence-based strategies to empower educators and institutions to design assessments that are fair, valid, reliable and transparent, and which meet national standards. They address the critical issues of cognitive misalignment, theory-practice gap, inconsistent assessment standards, and limited educator development.

Their implementation has the potential to strengthen assessment practices within nursing higher education by enhancing students' metacognitive skills, promoting reflective learning, and supporting the development of graduates who are both academically and clinically competent. Importantly, the guidelines extend beyond individual educator practice by emphasising the role of institutional support, quality-assurance mechanisms, and professional development in sustaining high-quality assessment design. In doing so, this study contributes to ongoing national and global efforts to improve teaching and learning in higher education, particularly within resource-constrained and diverse educational contexts. The findings align with the broader agenda of advancing equitable and quality education as outlined in SDG 4.

Future research should focus on implementing and evaluating these guidelines across multiple institutions to assess their impact on assessment quality, student performance, and moderation outcomes. Further studies should also explore their applicability to clinical assessment contexts, which were beyond the scope of this study.

References

- Abou Hashish, Ebtsam Aly, Hend Alnajjar, and Hawazen Rawas. 2025. "Voices on Academic Accreditation: Lived Experiences of Nurse Educators, Administrators, Students, and Alumni in Nursing Education." *BMC Medical Education* 25(1): 64.
<https://doi.org/10.1186/s12909-025-06657-2>
- Ajjawi, Rola Joanna Tai, Mollie Dollinger, Phillip Dawson, David Boud, and Margaret Bearman. 2024. "From Authentic Assessment to Authenticity in Assessment: Broadening Perspectives." *Assessment and Evaluation in Higher Education* 49(4): 499–510.
<https://doi.org/10.1080/02602938.2023.2271193>

- Akib, Erwin, and Muh Arief Muhsin. 2020. "Critical Thinking in Cognitive Domain: Exploring Assessment of English Teaching in the Pandemic Period of Covid-19." *Journal of English Educators Society* 5(2): 178–184. <https://doi.org/10.21070/jees.v5i2.752>
- Bazvand, Ali Darabi, and Amirhossein Rasooli. 2022. "Students' Experiences of Fairness in Summative Assessment: A Study in a Higher Education Context." *Studies in Educational Evaluation* 72: 101118. <https://doi.org/10.1016/j.stueduc.2021.101118>
- Bennett, Lorraine, and Ali Abusalem. 2024. "Building Academic Integrity and Capacity in Digital Assessment in Higher Education." *Athens Journal of Education* 11 (1): 71–94. <https://doi.org/10.30958/aje.11-1-5>
- Biggs, John. 1996. "Enhancing Teaching through Constructive Alignment." *Higher Education* 32(3): 347–364. <https://doi.org/10.1007/BF00138871>
- Biggs, John. 2003. "Aligning Teaching for Constructing Learning." *Higher Education Academy* 1(4): 381–388.
- Biggs, John, Catherine Tang, and Gregor Kennedy. 2022. *Teaching for Quality Learning at University*. 5th ed. Maidenhead: McGraw-Hill Education.
- Bloom, Benjamin. 1956. *Taxonomy of Educational Objectives: The Classification of Educational Goals*. New York: Longman.
- Boud, David, and Margaret Bearman. 2024. "The Assessment Challenge of Social and Collaborative Learning in Higher Education." *Educational Philosophy and Theory* 56(5):459–468. <https://doi.org/10.1080/00131857.2022.2114346>
- Calaguas, Noriel. 2023. "Mentoring Novice Nurse Educators: Goals, Principles, Models, and Key Practices." *Journal of Professional Nursing* 44: 8–11. <https://doi.org/10.1016/j.profnurs.2022.11.002>
- Chukwu, Otuto Amarauche, Jessica Nadigel, Bahar Kasaai, Rhonda Boateng, Richard Glazier, and Meghan McMahon. 2024. "Understanding the Training, Mentorship, and Professional Development Priorities of Early Career Embedded Researchers." *The International Journal of Health Planning and Management* 39(5): 1277–1297. <https://doi.org/10.1002/hpm.3800>
- Creswell, John, and David Creswell. 2017. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks: SAGE Publications.
- Daniels, Carlo Emile. 2026. "Higher Education for Sustainable Development: Brazil and South Africa's Path Trajectory Towards SDG 4." In *The BRICS Imperative: Confronting Climate Challenges and Advancing Sustainable Development*, 71–90. Springer.
- Donough, Gabieba. 2024. "Development of Best Practice Guidelines for the Design of Theoretical Assessments in an Undergraduate Nursing Programme at a Higher Education Institution in the Western Cape." Doctoral thesis; University of the Western Cape.

- Donough, Gabieba, Felicity Daniels, and Katlego Mthimunye. 2022. "Designing Theoretical Assessments at Nursing Higher Education Institutions: A Scoping Review." *South African Journal of Higher Education* 36(2): 79–98.
- Donough, Gabieba, Katlego Mthimunye, and Felicity Daniels. 2025a. "Quality Assurance: A Document Review of Moderation Reports on Final Theoretical Assessments." *Health SA Gesondheid* 30: 1–7. <https://doi.org/10.4102/hsag.v30i0.3024>
- Donough, Gabieba, Katlego Mthimunye, and Felicity Daniels. 2025b. "Strengthening Theoretical Assessment Design in Nursing Education: Advancing SDG 4." *Health SA Gesondheid* 30: 1–8. <https://doi.org/10.4102/hsag.v30i0.3061>
- dos Reis, Karen, Christie Swanepoel, Di Yu, and Fiona Anciano. 2022. "Exploring the Alignment of First-year Summative Assessments with Bloom's Taxonomy: A Longitudinal Study." *South African Journal of Higher Education* 36(5): 37–57. https://hdl.handle.net/10520/ejc-high_v36_n5_a3
- Dsilva, Fatima, and Prabhu Prathima. 2024. "Measuring Competence: The Journey to Professional Readiness in Nursing Education." *Chinese Journal of Evidence-Based Medicine* 20(1): 108–116.
- Ellis, Misty, Debra Hampton, Andrew Makowski, Candice Falls, Elizabeth Tovar, Leslie Scott, and Sheila Melander. 2023. "Using Unfolding Case Scenarios to Promote Clinical Reasoning for Nurse Practitioner Students." *Journal of the American Association of Nurse Practitioners* 35(1): 55–62. https://journals.lww.com/jaap/Abstract/2023/01000/Using_unfolding_case_scenarios_to_promote_clinical.9.aspx
- Ergashevich, Ernazarov Alisher. 2024. "The Role of Bloom's Taxonomy in Determining Pedagogical Objectives in the Process of Educational Lessons." *American Journal of Language, Literacy and Learning in STEM Education* (2993–2769) 2 (1): 264–270.
- European Society of Human Reproduction and Embryology. 2018. "Guideline Development Process." *Human Reproduction*. <https://www.eshre.eu/Guidelines-and-Legal/Guidelines/Guideline-development-process>
- Fasanya, Ayodele Gabriel, Simon Adekali Negedu, and Opeyemi Ibrahim AbdulWaheed. 2023. "Quality Assessment for Instructional Process in Tertiary Institutions in Nigeria: Challenges and Way Forward." *Journal of Science, Technology and Mathematics Pedagogy* 1(2): 183–201. <https://jostmp-ksu.com.ng/index.php/jostmp/article/view/80/52>
- Hecker, Kent Danielson, Cees van der Vleuten, and Harold Bok. 2024. "Constructive Alignment and Programmatic Assessment." In *Veterinary Medical Education: A Practical Guide*, edited by Jennifer Hodgson and Jaquelyn Pelzer, 279–293. New York: Wiley-Blackwell.

- Hui, Emily Sein Yue Elim. 2025. "Incorporating Bloom's Taxonomy into Promoting Cognitive Thinking Mechanism in Artificial Intelligence-supported Learning Environments." *Interactive Learning Environments* 33 (2): 1087–1100. <https://doi.org/10.1080/10494820.2024.2364237>
- İlaslan, Emine, Derya Adıbelli, Gamze Teskereci, and Şengül Üzen Cura. 2023. "Development of Nursing Students' Critical Thinking and Clinical Decision-making Skills." *Teaching and Learning in Nursing* 18(1): 152–159. <https://doi.org/10.1016/j.teln.2022.07.004>
- Irenka, SUTO, and Jo Ireland. 2021. "Principles for Minimizing Errors in Examination Papers and Other Educational Assessment Instruments." *International Journal of Assessment Tools in Education* 8(2): 310–325. <https://doi.org/10.21449/ijate.897874>
- Jin, Xinglin, Tongji Li, Jacobiene Meirink, Anna Van Der Want, and Wilfried Admiraal. 2021. "Learning from Novice–expert Interaction in Teachers' Continuing Professional Development." *Professional Development in Education* 47(5): 745–762. <https://doi.org/10.1080/19415257.2019.1651752>
- Köksal, Dinçay, and Ömer Gökhan Ulum. 2018. "Language Assessment through Bloom's Taxonomy." *Dil ve Dilbilimi Çalışmaları Dergisi* 14(2): 76–88. <https://dergipark.org.tr/en/pub/jills/issue/43364/527924>
- Lestari, Septia Sri, and M Sirozi. 2025. "Bloom's Taxonomy Theory and the Challenges of its Implementation in Education." *Journal of Educational Sciences* 9(6): 6043–6055. 10.31258/jes.9.6.p.6043-6055
- Luna-Aleixos, David, Víctor M González-Chordá, Marta Aquilué-Ballarí, Irene Llagostera-Reverter, Gema Mecho-Montoliu, Águeda Cervera-Gasch, María Jesús Valero-Chillerón, Desirée Mena-Tudela, and Laura Andreu-Pejó. 2023. "Developing and Validating an Integrated Instrument for Nursing Assessments in Adult Hospitalization Units: Study Protocol." *Nursing Open*. <https://doi.org/10.1002/nop2.1602>
- Mallari, Cristina Beatrice, Jayne Lois San Juan, and Richard Li. 2023. "The University Coursework Timetabling Problem: An Optimization Approach to Synchronizing Course Calendars." *Computers and Industrial Engineering* 184: 109561. <https://doi.org/10.1016/j.cie.2023.109561>
- Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt. 2022. *Evidence-based Practice in Nursing and Healthcare: A Guide to Best Practice*. (ebook) Lippincott Williams & Wilkins.
- Mosabala, Mpho. 2025. "Internal Quality Assurance Practices at Universities in South Africa." *INTED2025 Proceedings*, South Africa.
- Paterson, Catherine, Nathan Paterson, William Jackson, and Fiona Work. 2020. "What are Students' Needs and Preferences for Academic Feedback in Higher Education? A Systematic Review." *Nurse Educ Today* 85: 104236. <https://doi.org/10.1016/j.nedt.2019.104236>

- Prichard, Roslyn, Jacqueline Peet, May El Haddad, Yingyan Chen, and Frances Lin. 2024. "Assessment Moderation in Higher Education: Guiding Practice with Evidence-An Integrative Review." *Nurse Education Today* 106512. <https://doi.org/10.1016/j.nedt.2024.106512>
- Scaled Agile Framework, SAFe. 2021. "How is the Time on an Exam Determined." Scaled Agile Framework. Scaled Agile Inc. https://support.scaledagile.com/s/article/FAQ-How-is-the-time-on-an-exam-determined?language=en_US
- Shivshankar, Smitha. 2024. "Assessment Integrity and Assessment Security in the Digital Era." In *Teaching and Learning in the Digital Era: Issues and Studies*, 137–163. World Scientific.
- Shohani, Masoumeh, Mohammadreza Bastami, Leili Abedi Gheshlaghi, and Abbas Nasrollahi. 2023. "Nursing Student's Satisfaction with Two Methods of CBL and Lecture-based Learning." *BMC Medical Education* 23(1): 1–5. <https://doi.org/10.1186/s12909-023-04028-3>
- Smith, Sheila, Mary Mescher Benbenek, and Lauren Petersen. 2025. "Diagnostic Reasoning Foundations: Theoretical and Scientific Background with Suggested Competencies for Nurse Practitioner Education." *AACN Advanced Critical Care* 36(2): 109–122. <https://doi.org/10.4037/aacnacc2025354>
- Sobral, Sónia Rolland. 2021. "Bloom's Taxonomy to Improve Teaching-learning in Introduction to Programming." *International Journal of Information and Education Technology* 11(3): 148–153. <https://doi.org/10.18178/ijiet.2021.11.3.1504>
- Stoltenkamp, Juliet, and Paul Dankers. 2023. "Leadership in Education: The Impact of Leadership on the Successful Implementation and Support of Remote Teaching, Learning and Assessment." *EDULEARN23 Proceedings*.
- Villarroel, Verónica, David Boud, Susan Bloxham, Daniela Bruna, and Carola Bruna. 2020. "Using Principles of Authentic Assessment to Redesign Written Examinations and Tests." *Innovations in Education and Teaching International* 57(1): 38–49. <https://doi.org/10.1080/14703297.2018.1564882>
- Villarroel, Verónica Daniela Bruna, Carola Bruna, Gavin Brown, and David Boud. 2024. "Authentic Assessment Training for University Teachers." *Assessment in Education: Principles, Policy and Practice* 1–19. <https://doi.org/10.1080/0969594X.2024.2350395>
- Wong, Su Hui Valynn, and Yanika Kowitlawakul. 2020. "Exploring Perceptions and Barriers in Developing Critical Thinking and Clinical Reasoning of Nursing Students: A Qualitative Study." *Nurse Education Today* 95: 104600. <https://doi.org/10.1016/j.nedt.2020.104600>

- Xavier, Marlon, and Julio Meneses. 2022. "Persistence and Time Challenges in an Open Online University: A Case Study of the Experiences of First-year Learners." *International Journal of Educational Technology in Higher Education* 19(1): 31.
<https://doi.org/10.1186/s41239-022-00338-6>
- Zickafoose, Alexis, Olawunmi Ilesanmi, Miguel Diaz-Manrique, Anjorin E Adeyemi, Benard Walumbe, Robert Strong, Gary Wingenbach, Mary T Rodriguez, and Kim Dooley. 2024. "Barriers and Challenges Affecting Quality Education (Sustainable Development Goal# 4) in Sub-Saharan Africa by 2030." *Sustainability* 16(7): 2657.
<https://doi.org/10.3390/su16072657>