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The Future is Connection:

Collaboration, Creativity and Compassion in a Digital Society

A tale of two trilemmas: Navigating trade-offs in assessment and feedback design

Juan Fischer, Michelle Pedlow, Andrew Williams

University of Western Australia

Assessment and feedback are expected to achieve an expanding range of educational purposes. They must support learning, assure standards, foster learner agency, provide credible evidence of achievement, promote inclusion, prepare students for professional practice, and remain feasible within increasingly complex institutional environments. These legitimate priorities cannot all be maximised simultaneously, requiring educators to navigate trade-offs in assessment and feedback design. Generative artificial intelligence (GenAI) has brought these longstanding tensions into sharper focus by challenging conventional assumptions about evidence, authorship and academic integrity. However, the underlying design problem extends well beyond AI. This paper proposes the Dual Trilemma Framework as a conceptual lens for designing assessment and feedback for learning. Rather than offering another set of design principles, the framework positions trade-offs as the central challenge of educational design. The *assessment trilemma* foregrounds tensions between authenticity, observability and feasibility, while the *feedback trilemma* highlights competing demands of usability, sources and sustainability. Together, these trilemmas function as a meta-framework that complements existing assessment and feedback frameworks by supporting explicit, context-sensitive design decisions. The paper argues that improving assessment and feedback depends less on pursuing idealised design principles and more on making informed, transparent and pedagogically defensible decisions about competing educational priorities.

Keywords: Assessment design, feedback design, higher education, GenAI, assessment integrity

Introduction

Assessment and feedback play a central role in higher education. They are expected to support learning, assure academic standards, foster evaluative judgement, prepare graduates for professional practice, promote inclusion, and provide credible evidence of achievement (Baartman & Quinlan, 2024; Bearman et al., 2023; Fawns et al., 2026). Educators must balance these purposes within increasingly complex environments characterised by growing class sizes, diverse student cohorts, regulatory requirements and constrained workloads (Tai et al., 2023). These legitimate expectations cannot always be optimised simultaneously, requiring educators to navigate competing educational priorities in assessment and feedback design.

Over the past two decades, assessment and feedback scholarship has generated numerous frameworks to support educational design. These include frameworks for authentic assessment (Villarroel et al., 2020), assessment design (Bearman et al., 2023), inclusive assessment (Nieminen, 2025; Tai et al., 2023), feedback literacy (Carless & Boud, 2018), enabling feedback processes (Henderson, et al., 2019), online assessment (Huber et al., 2024), and programmatic assessment (Schuwirth & Van Der Vleuten, 2011). These frameworks identify desirable design principles but offer less support for determining which should take precedence when legitimate priorities come into tension. Assessment design therefore becomes an exercise in negotiating trade-offs between competing educational goods within disciplinary, institutional and practical constraints.

Generative artificial intelligence (GenAI) has brought these longstanding tensions into sharper focus. AI-generated text, images and other media have challenged conventional assumptions about authorship, originality, and the visibility of learning, prompting renewed attention on academic integrity, assessment security and the evidentiary basis of assessment (Corbin et al., 2025a; Corbin et al., 2025b). Institutional responses often seek greater observability or authenticity while maintaining scalability and sustainability. Yet GenAI has amplified an existing design challenge: desirable characteristics such as authenticity, inclusion,

validity, transparency, scalability and sustainability cannot all be maximised simultaneously. Existing frameworks provide valuable guidance on these qualities, yet offer less support for navigating the compromises required when they compete in practice (Corbin et al., 2025a).

This paper argues that assessment and feedback design is fundamentally a process of negotiating competing educational priorities through explicit and defensible design decisions. We propose the *Dual Trilemma Framework* as a conceptual lens that places these trade-offs at the centre of educational decision-making. The framework comprises two complementary trilemmas: the *assessment trilemma*, encompassing authenticity, observability and feasibility; and the *feedback trilemma*, encompassing usability, sources and sustainability. The Dual Trilemma Framework functions as a meta-framework that complements existing frameworks and helps educators reason across them and make transparent, context-sensitive and educationally defensible design decisions.

Assessment and feedback design as trade-offs

Assessment and feedback scholarship has long recognised that educational design involves balancing multiple purposes. Authentic assessment emphasises meaningful engagement with disciplinary, professional and societal practice (McArthur, 2016; Villarroel et al., 2020), while validity and evidentiary scholarship foreground the need for credible evidence to support defensible claims about learning (Fawns et al., 2026). Feedback scholarship has similarly shifted attention from information transmission towards learner-centred processes of sense-making, dialogue and action (Carless & Boud, 2018). Inclusive assessment further reminds educators that assessment conditions must support diverse learners' participation and agency (Tai et al., 2023), while programmatic assessment shows how tensions between learning, feedback and judgement can be managed across longitudinal systems rather than resolved within individual tasks (Govaerts et al., 2022).

Collectively, these perspectives highlight how educational principles interact in practice. Authenticity can strengthen educational relevance while increasing moderation complexity; observability can support defensible judgement while constraining flexibility or learner agency; and rich feedback processes can enhance learning while increasing demands on time, coordination and relational labour. The Dual Trilemma Framework positions these tensions as competing design commitments. It comprises two complementary trilemmas: the *assessment trilemma*, which balances *authenticity, observability* and *feasibility*, and the *feedback trilemma*, which considers *usability, sources* and *sustainability*. Together, they provide a shared language for understanding assessment and feedback as interconnected design challenges. The framework encourages educators to ask three questions: What matters most in this context? Which trade-offs are acceptable? How can these trade-offs be made explicit and justified? By foregrounding these questions, the framework shifts attention from selecting the "best" assessment or feedback method towards designing coherent, transparent, context-sensitive and educationally defensible systems.

The framework was developed through conceptual synthesis of assessment and feedback scholarship, rather than systematic review, examining recurring tensions that arise when established educational priorities interact in practice. The six dimensions were selected because they represent distinct yet interdependent design priorities that recur across this literature and create consequential trade-offs in educational decision-making. They are not intended as an exhaustive account of assessment and feedback quality, but foreground priorities whose interaction creates particularly salient design tensions. They are organised as **trilemmas**, drawing on the economic notion of competing priorities that cannot be simultaneously maximised, where privileging one dimension can constrain or increase demands on the others.

The assessment trilemma

The assessment trilemma comprises *authenticity*, *observability* and *feasibility*. These dimensions represent three essential design considerations that are frequently discussed within the assessment literature but rarely conceptualised as competing priorities.

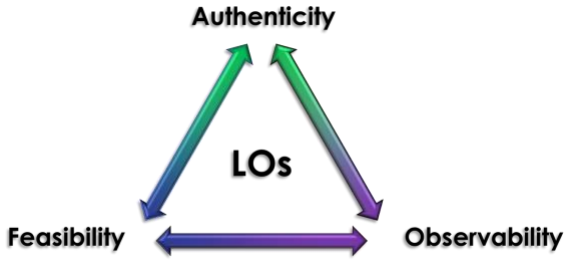


Figure 1. *The assessment trilemma*

Authenticity reflects the extent to which assessment engages students in meaningful disciplinary, professional or societal practice, rather than merely replicating workplace tasks or real-world artefacts. Authentic assessment encourages learners to apply knowledge in complex contexts, exercise professional judgement and engage with problems that extend beyond the classroom. Such tasks are widely recognised for promoting deeper learning and preparing graduates for future practice. However, increasing authenticity often introduces greater complexity, making assessment more difficult to standardise, moderate and implement consistently across diverse educational contexts.

Observability concerns the extent to which assessment generates credible evidence from which educators can make defensible judgements about student learning, reasoning and capability. This has become increasingly important in GenAI-enabled contexts, where traditional assumptions about authorship, originality and product-based evidence are more difficult to sustain. Observability focuses on making learners' reasoning, decision-making and performance sufficiently visible to support valid educational judgements, without relying on surveillance or misconduct detection.

Feasibility acknowledges that assessment quality is shaped by resourcing, workload, scalability, moderation and institutional conditions, rather than by conceptual strength alone. Assessment may be educationally compelling, yet become impractical if it requires excessive staff workload, specialist resources, complex moderation processes or assessment conditions that cannot be sustained at scale. Feasibility therefore encompasses educator workload, scalability, resourcing, coordination and long-term viability, recognising that educational quality cannot be separated from the conditions under which assessment is enacted.

These three dimensions exist in continual tension. Increasing authenticity may require complex performances that reduce observability or demand resources that challenge feasibility. Strengthening observability through additional checkpoints, oral defences or process evidence may improve confidence in assessment decisions but increase workload or constrain authentic professional practice. Prioritising feasibility may favour standardised assessment approaches that are easier to administer but provide less authentic or less informative evidence of learning. The assessment trilemma therefore encourages educators to make these competing priorities explicit, recognising that they cannot all be simultaneously maximised.

The feedback trilemma

While assessment establishes the evidence of learning, feedback shapes how that evidence becomes learning. Contemporary scholarship increasingly conceptualises feedback as a process in which learners interpret, evaluate and use information from multiple sources to improve future performance, rather than simply receiving comments from educators. Designing effective feedback therefore involves a distinct, though closely related, set of trade-offs. The feedback trilemma comprises *usability*, *sources* and *sustainability*.

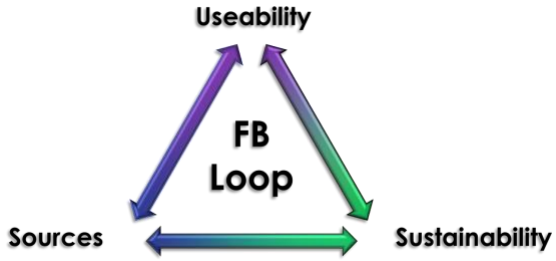


Figure 2. *The feedback trilemma*

Usability reflects the extent to which learners can interpret, evaluate and act on feedback information to inform future work. Feedback only contributes to learning when students understand its purpose, connect it with standards and successfully translate it into future action. Providing more feedback does not necessarily increase usability if learners cannot meaningfully engage with or apply the information they receive.

Sources recognise that feedback information may emerge through educator comments, peer dialogue, self-assessment, exemplars, workplace interactions, digital tools and learner-generated comparisons. Educator comments remain important, but feedback also emerges through peer dialogue, self-assessment, exemplars, workplace supervisors, digital technologies and, increasingly, GenAI. Richer feedback ecosystems provide diverse perspectives that can strengthen learning; however, they also require learners to reconcile potentially conflicting information and develop sophisticated evaluative judgement.

Sustainability acknowledges that feedback processes dependent solely on extensive educator-generated comments are difficult to maintain within mass higher education and may not support learner uptake. Sustainable feedback therefore involves designing processes that distribute responsibility across learners, peers, educators and technologies while preserving educational quality and supporting ongoing engagement.

As with assessment, these dimensions cannot all be optimised simultaneously. Increasing the diversity of feedback sources may enrich learning while reducing coherence. Highly personalised feedback may enhance usability but become difficult to sustain across large cohorts. Efficient feedback processes may improve sustainability but reduce opportunities for dialogue or individualisation. Rather than treating these tensions as shortcomings, the feedback trilemma positions them as inevitable design considerations requiring explicit educational judgement.

Putting the framework to work

The Dual Trilemma Framework provides a structured way to navigate competing educational priorities without prescribing a single assessment solution. Consider redesigning assessment for a large first-year course in the era of GenAI. Existing guidance may encourage educators to increase authenticity, strengthen academic integrity, enrich feedback, improve inclusion and maintain scalability. While each goal is educationally desirable, pursuing them simultaneously creates competing demands. Through the assessment trilemma, educators can deliberately balance *authenticity, observability* and *feasibility*. For example, introducing a brief oral defence alongside an authentic written task may modestly reduce feasibility while substantially increasing observability. Alternatively, staged submissions and reflective commentaries can strengthen observability without relying on fully invigilated assessment. Neither approach is inherently superior; each represents a different balance of educational priorities.

The same reasoning applies to feedback design. Educators might combine peer dialogue, self-assessment, exemplars, AI-supported feedback and targeted educator input to create *sustainable* feedback ecosystems that reduces reliance on personalised educator comments. Such approaches can improve *sustainability* while broadening feedback *sources*, provided students are supported to interpret and integrate multiple forms of feedback. In this way, the Dual Trilemma Framework complements existing assessment and feedback frameworks by helping educators identify which design priorities matter most within a particular context and make transparent, context-sensitive and educationally defensible design decisions.

Conclusion

The Dual Trilemma Framework contributes to assessment and feedback scholarship by reframing educational design as a process of navigating competing educational priorities. It functions as a meta-framework that helps educators reason across them when desirable principles compete, shifting the design question from what constitutes good assessment and feedback to what should be prioritised, what trade-offs are acceptable, and how those decisions can be justified. In doing so, the framework makes trade-offs visible, provides a shared language for collaborative design conversations, and supports more transparent and context-sensitive decision-making. These are particularly relevant as institutions respond to the opportunities and challenges presented by GenAI. Assessment redesign cannot be driven by concerns about academic integrity or technological change alone. Instead, educators must balance authenticity, observability and feasibility alongside feedback that is usable, draws on multiple sources and remains sustainable. The Dual Trilemma Framework offers a way of making these competing considerations explicit, enabling more coherent and educationally defensible assessment and feedback design.

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