

Start with Outcomes

Framework for purposive assessment redesign in an age of AI

A Practice Guide



UNIVERSITY OF CAPE TOWN
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Introduction

Universities have rushed to “safeguard” assessment in response to generative AI, locking down formats, tightening surveillance, and doubling down on integrity measures. While understandable, such moves are often reactive, defensive, and driven more by institutional anxiety than by educational purpose. This guide asks whether we’re solving the wrong problem. Instead of asking, “How do I protect my assessment from AI?”, the real challenge may be more fundamental: “Are our intended learning outcomes still relevant in a world shaped by AI?”

This guide introduces two practical tools developed through a collaborative institutional project on the implications of AI for assessment in higher education:

1. **A five-category typology** for reviewing intended learning outcomes to determine their relevance and vulnerability in an AI-pervasive context.
2. **The Framework for purposeful assessment redesign**, a structured process for adapting learning outcomes, reviewing alignment with educational intent, and aligning assessment tasks with those outcomes while foregrounding principles of equity and justice.

You will learn how to apply the typology to critically review learning outcomes, then use the framework to explore redesign possibilities. In the process, you will consider how assessment can both leverage and ethically navigate AI, moving beyond anxiety-driven safeguards toward creative, critical, and principled responses.

Footnote: This guide adopts an expansive use of ‘AI’, but there is more focus on generative AI because of the disruptive aspects for traditional teaching, learning and assessment. AI will be used in this guide to be inclusive of generative AI.

Purpose of this guide

There is now no shortage of advice available about (re)designing assessment in an age of AI^{1,2}. However, all of these approaches have one potential flaw in common. They all focus on the characteristics of the assessment. It may seem counterintuitive to say this is a flaw but here is why we believe this to be the case. While it may seem to be most vulnerable to disruption, assessment is but one of an interrelated set of components of a curriculum. By focussing on how to redesign assessment, we risk allowing whatever AI tools are available at any given time to drive and distort assessment design. This in turn can disrupt the educational process, given how powerful the learning effects of assessment are. Focusing on assessment privileges the capability of the tools over educational intent. As the capability of these pervasive tools expands, so we keep tweaking whatever aspect of assessment seems most at risk of disruption in response. These piecemeal and reactive responses risk resulting in **tool-distorted** rather than **purpose-driven** assessment design.

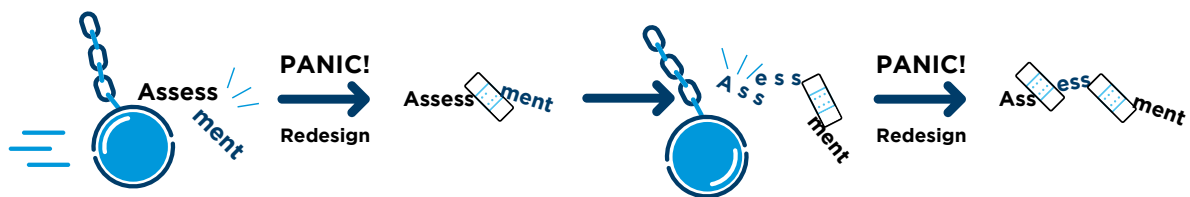


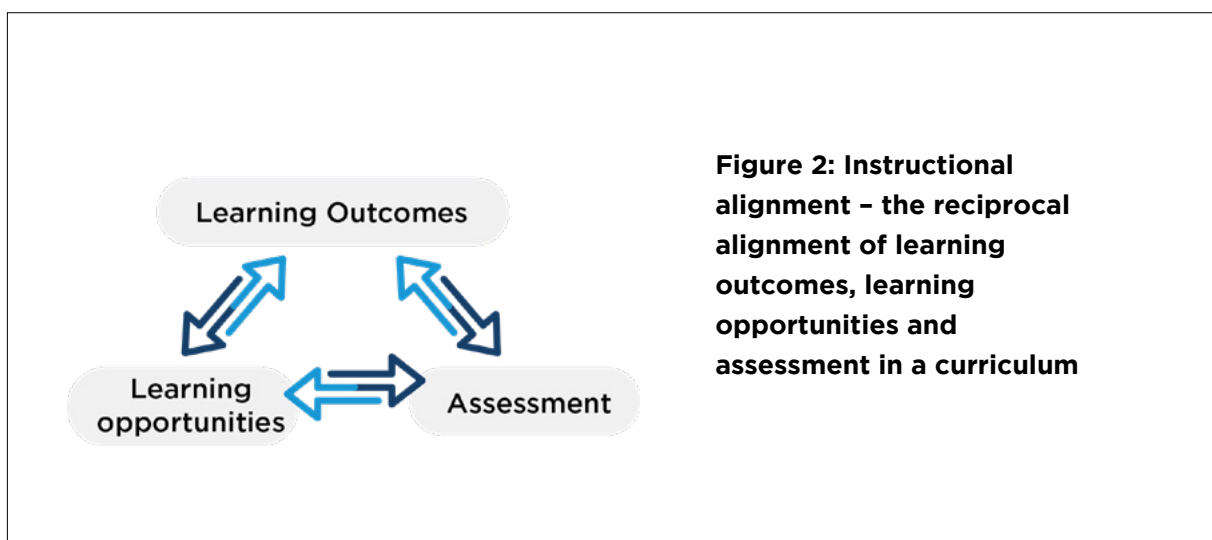
Figure 1: A never-ending cycle of assessment redesign - and distortion - in response to the AI wrecking ball

¹Perkins, M., et al. (2025). "AI Assessment Scale (AIAS)." from <https://aiassessmentscale.com/>

²McMinn, S. (2025). "Rethinking Assessments." LinkedIn <https://www.linkedin.com/pulse/rethinking-assessments-sean-mcminn-qoevc/>

What then is the problem to solve?

We take a different perspective on the issue. To move on from piecemeal, reactive assessment redesign, we need to navigate an AI enabled world by beginning with the end in mind. To meet this present-day challenge, we turn back to the clock to the concept of instructional alignment. The principle is simple. To be most effective, three components of the curriculum should be mutually aligned: the intended learning outcomes; the learning opportunities and the assessment.



The reason for this is that we believe that the disruption being caused by AI is not, as first appears to be the case, disruption of assessment. It is rather and more fundamentally disruption of the learning outcomes of our educational programmes.

AI is perhaps most obviously making some new things possible. This requires assessing new things. It is also offering different ways of doing things that are already part and parcel of curricula. This requires assessing things in different ways. AI is making things possible much earlier in a programme or even at a lower level e.g., Honours rather than Master's level. This requires assessing at different times. In some cases, AI is making current ways of achieving an outcome, or even the outcome itself, redundant. This requires dropping some assessments.

When we focus on assessment, we risk focussing on a process or an artefact that represents a way of doing things that is no longer relevant or valid, while losing sight of the outcome we should be assessing. What we propose here is keeping the learning outcomes front and centre - beginning with the end in mind. Assessment redesign starts with the learning outcomes.

Being purposeful - An outcome review typology

The approach we propose is built around our **outcome review typology for AI responsive assessment**. This typology comprises five categories of outcomes that have been developed by considering whether a learning outcome could be and should be changed in the face of AI. These categories range through a spectrum from outcomes that are fully human centric, where AI should play no role, to outcomes that are obsolete because of the role of AI.

Table 1: Outcome categories and definitions

1	Fully Human-Centric (AI plays no role; all learning remains human-driven.) Definition: These are outcomes that require direct human engagement, judgment, ethical reasoning, empathy, social accountability and real-world contextual understanding. AI cannot meaningfully contribute without undermining the core purpose of the learning experience.
2	AI-Augmented (AI supports but does not replace human cognition.) Definition: Outcomes where human judgment is central, but AI provides supportive input. AI enhances the learning process by improving efficiency, analysis, or personalization, but students must still engage critically with AI-generated insights. AI assists but does not replace interpretation, decision-making, or direct real-world engagement. Students must critically integrate AI contributions while retaining accountability.
3	AI-Enabled (AI is necessary to achieve learning outcomes; the task would not be possible without it.) Definition: AI expands learning possibilities by enabling students to engage with advanced tasks that would be infeasible without AI. Students focus on understanding and applying AI-generated insights rather than manually replicating them. Mastery involves responsible, effective, and ethical use of AI.
4	AI-Dominant (AI fully automates the task, requiring minimal or no human oversight.) Definition: Outcomes primarily achieved through AI, with humans in supervisory or evaluative roles. AI performs most of the substantive work. Students interpret AI-generated outputs, verify accuracy, and make informed decisions based on AI-generated recommendations. The focus shifts from manual execution to critical evaluation and oversight.
5	Obsolete (AI has fully replaced the need for this outcome to be taught.) Definition: Outcomes that have lost educational value because AI can achieve them fully, reliably, and more efficiently than humans. Retaining these outcomes risks misalignment with contemporary needs. Teaching this outcome would be a waste of curriculum time.

How to use the typology

A framework for purposeful assessment redesign

The typology is used as the first step of a framework for purposeful assessment redesign (Figure 3). This can be applied to learning outcomes at any level – those for a unit of learning; those for a module or course; or exit level outcomes for a programme.

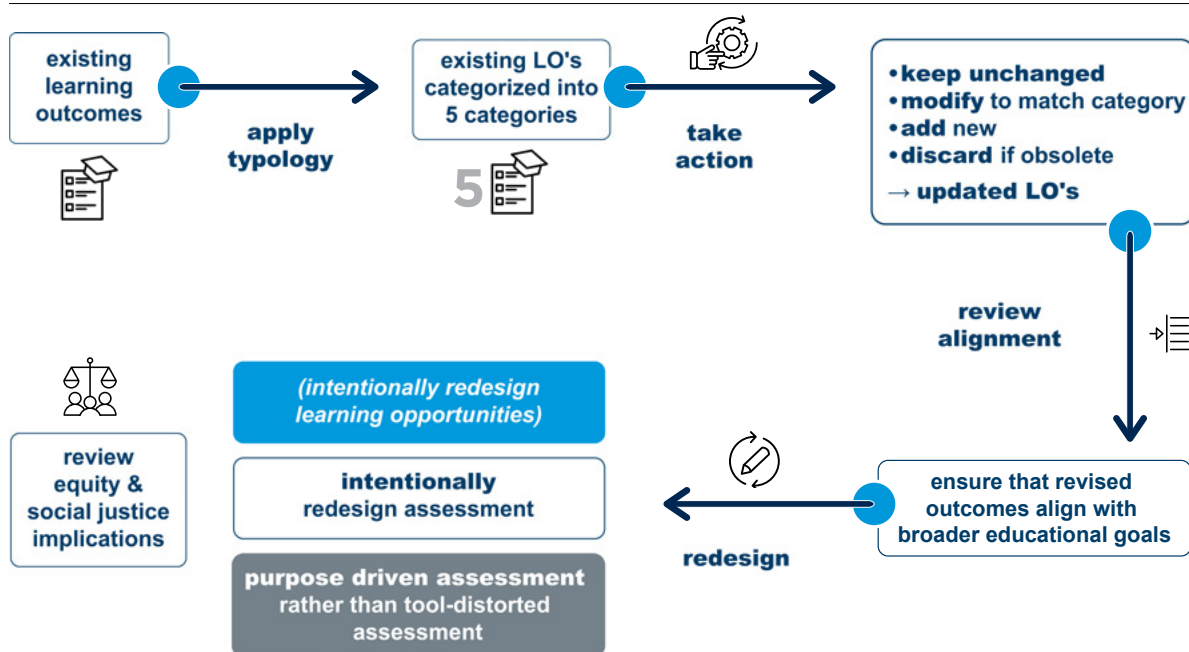


Figure 3: Framework for purposeful assessment redesign

Step 1: Screen outcomes to determine an initial categorisation

Use the screening tool in Appendix 1 to formulate a preliminary classification of outcomes

Step 2: Definitive categorisation of outcomes

Use the 12 sets of questions detailed in Appendix 2 to definitively place outcomes in one of the five categories prior to undertaking modification of the outcomes. Record reflections on each dimension to ensure your decision is defensible and to guide future curriculum review.

Step 3: Modifying the set of outcomes

Having decided what categories the learning outcomes fall into, the next step is to modify, add or discard outcomes.

1. Outcomes that are unchanged: Human-centric outcomes will be kept as is.
2. Outcomes that are modified: Outcomes that are deemed AI-augmented, AI-enabled or AI-dominant need to be modified to reflect how AI changes what is possible and desirable at the level of learning.

3. Outcomes to be added: AI will make some new outcomes necessary, which may range from achieving critical AI literacy to achieving competence using AI tools for particular purposes.
4. Outcomes to be discarded: This is perhaps the most challenging decision to make. What outcomes are no longer worth pursuing at the level of learning? These should be discarded.

Step 4: Review alignment

Having decided how to modify the learning outcomes, the alignment of the modified set of outcomes needs to be considered against the overall purpose of the educational programme. Has the process of revising the outcomes distorted what the programme is about? Are the outcomes still true to the purpose of the programme? If not, does that signal that the purpose of the programme needs revision?

Step 5: Revise assessment

Only now, having now clarified what the learning outcomes should be and what role AI should play, do we turn to the process of redesigning assessment.

Note that at this point, in keeping with the concept of instructional alignment, it would also be appropriate to reconsider the design of learning opportunities or learning activities.

Step 6: Review equity and social justice implications

Equally inasmuch as AI may skew assessment away from learning outcomes, responding to AI may also disrupt the ways in which assessment and instructional design pursue equity and social justice in the curriculum. Before finalising the redesign of assessment, it is important to consider whether the new assessment poses challenges to equity and social justice.

Conclusion

The purpose of this guide is to provide some tools and principles that can assist you as you consider how to design assessment that can both leverage and ethically navigate AI. The approach is intended to move practice beyond anxiety-driven safeguards toward creative, critical, and principled responses. It is beyond the scope of this guide to provide detailed support with decisions around specific assessment practices once you have decided what your outcomes in a AI enabled world should be.

If you would like to engage in a discussion with us or if you would like to explore the impact of this approach for your course, department or academic programme in an interactive format, please get in touch (LSTSOR001@myuct.ac.za). Staff at workshops around the country have found this approach to be useful. If you are at the University of Cape Town, also keep an eye open for the next [Assessment Studio](#) which offers staff an opportunity to work in a supportive community to develop and refine the assessment activities and practices in their course.

Appendix 1: Outcome screening tool

Step 1: Ask the core question

Does this outcome still matter
for students' futures in an AI-pervasive world?

No

Outcome is likely **Obsolete**

Yes

Continue to Step 2

Step 2: Consider the role of human qualities

Is the outcome achievable only through
empathy, ethics, judgment, or contextual understanding?

No

Continue to Step 3

Yes

Fully Human-Centric

Step 3: Consider the role of AI

If AI is used, does it primarily support learners
(enhancement) or replace them (replacement)?

Support/Enhance
AI-Augmented

Replace

Continue to Step 4

Step 4: Examine how students must engage with AI

Must students actively use AI as part of learning or practice?

Yes

AI-Enabled

No, AI does the main work

AI-Dominant

Appendix 2: 12 Dimensions of difference for reviewing learning outcomes

When reviewing outcomes, it is important to go beyond quick classification and explore how AI changes the roles of humans and machines, the demands of learning, and the long-term value of each outcome. It is helpful to consider outcomes across four broad clusters of difference. Each cluster highlights related aspects of how AI reshapes learning, teaching, and assessment. Within each cluster, the individual dimensions are distinct but interconnected.

A The Human–AI Balance

This cluster focuses on how responsibility for achieving an outcome is distributed between human capacities and AI contributions. It surfaces whether the outcome depends primarily on human qualities, on AI, or on some combination of the two.

1. Role of AI in achieving the outcome

This dimension asks whether AI is necessary, optional, or irrelevant to the achievement of the outcome.

Operational question: Could students realistically achieve this outcome without using AI? If AI is used, does it significantly change the way the outcome is reached?

2. Nature of AI’s contribution (enhancement vs. replacement)

This dimension distinguishes between outcomes where AI strengthens or extends what humans can do (enhancement), and those where AI substitutes entirely for human work (replacement).

Operational question: Does AI primarily extend what students contribute, or does it take over their role altogether?

3. Role of human cognition, judgment, and contextual understanding

Here the focus is on the extent to which analytical reasoning, contextual awareness, and judgment are essential to the outcome, beyond what AI can provide.

Operational question: Does achieving this outcome require learners to exercise human judgment or situational understanding that AI cannot replicate?

4. Role of human qualities

Some outcomes rely on qualities that are uniquely human, such as empathy, compassion, ethical reasoning and social accountability or cultural humility.

Operational question: Is success in this outcome dependent on human qualities like empathy, ethical discernment, or accountability to society?

B Shifts in Cognitive and Learning Demands

This cluster highlights how the presence of AI alters what kinds of mental effort and skill are most important for students, and what new possibilities for learning open up.

5. Cognitive load and skill emphasis shift

This dimension explores how AI changes the skills learners must prioritise. AI could

reduce, redistribute, or increase cognitive effort. Routine tasks may become less important, while oversight, creativity, or critical evaluation may become more important.

Operational question: With AI involved, what becomes more central (e.g., oversight, creativity) to student learning, and what becomes less relevant (e.g., routine recall)?

6. AI's impact on expanding learning possibilities

AI may enable new forms of inquiry, creativity, or practice that would not otherwise be feasible or possible.

Operational question: Does AI enable students to achieve something they couldn't before?

C Implications for Curriculum, Teaching, and Assessment

This cluster deals with the practical consequences of AI for how curricula are designed, how teaching is carried out, and how learning is assessed and validated.

7. Degree of curriculum adaptation required

Some outcomes may require little adjustment in content or pedagogy, while others may demand substantial redesign of courses or programmes.

Operational question: To keep this outcome relevant, how significantly would we need to change what is taught, how it is taught, or the overall structure of the curriculum?

8. Affects how students learn and how we teach

AI can alter how students approach their studies and how lecturers need to scaffold learning.

Operational question: Does AI change the strategies students are likely to use to learn this outcome, and does that imply changes in teaching practice?

9. Affects how we assess and validate learning

The availability of AI raises questions about how we design assessments and ensure that what is measured still reflects student competence.

Operational question: If students can use AI for this outcome, how can we still assess their own understanding, ability, or judgment fairly?

D Relevance and Future-Proofing

This cluster looks at whether outcomes remain meaningful and durable in an AI-pervasive world, and how much autonomy students should have in their engagement with AI.

10. Stability over time (static vs. evolving AI role)

Some outcomes may be stable, with AI's role unlikely to change, while others may shift rapidly as AI advances.

Operational question: Is the role of AI in relation to this outcome stable and predictable, or is it likely to evolve quickly?

11. Relevance of the outcome in an AI-pervasive world

This dimension asks whether the outcome continues to matter for students' future professional, academic, or civic roles.

Operational question: Will this outcome remain valuable for graduates in future professional or civic contexts?

12. Degree of student autonomy in AI use

Students may need to learn when and how to use AI responsibly, or AI use may be predetermined by disciplinary norms or institutional rules.

Operational question: Should students have freedom to decide when and how to use AI for this outcome, or should its use be prescribed or limited?

Together, these clusters and dimensions provide a structured way of interrogating outcomes. Rather than asking only “Which category does this belong in?”, they encourage lecturers to reflect more deeply on why an outcome falls in that category, and what that means for teaching, curriculum, and assessment.