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Consultation open until Friday 20 October 2023

TEQSA invites feedback on the proposals outlined in this paper, including the principles and propositions.

You can share your feedback by emailing integrityunit@teqsa.gov.au by 5pm on Friday 20 October.

To assist us with incorporating your feedback, please address the following questions in your submission:

1. What feedback do you have on the two principles and five propositions?
2. Thinking about the application of these principles and propositions to your specific context, do you have examples of where these will work or not work?
3. What do you think needs to happen next to support the required change in the sector and/or at your institution?

At the end of the consultation period, TEQSA and the lead authors of this document will consider all feedback received before publishing the final guidelines in late November 2023.

If you have any questions about this consultation, or the guiding principles, please email us at integrityunit@teqsa.gov.au.
Assessment reform for the age of artificial intelligence

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Preamble

The emergence of generative artificial intelligence (AI), while creating new possibilities for learning and teaching, has exacerbated existing assessment challenges within higher education. However, there is considerable expertise, based on evidence, theory and practice, about how to design assessment for a digital world, which includes artificial intelligence. AI is not new, after all. This document, constructed through expert collaboration, draws on this body of knowledge and outlines directions for the future of assessment. It seeks to provide guidance for the sector on ways assessment practices can take advantage of the opportunities, and manage the risks, of AI, specifically generative AI.

The most immediate concern is that students may use generative AI in assessment tasks, calling into question their personal learning attainment. It is challenging to design assessment tasks that preclude substantial use of generative AI and it appears almost impossible to detect if these technologies have been used in the production of assessment products in a reliable way. Moreover, there is every possibility that what generative AI can produce will be of a passable quality for many assessment tasks. Therefore, it is necessary to address the nature of assessment in relation to generative AI directly to provide students and teachers with ways to approach this issue productively.

Collectively, these threats to academic integrity highlight weaknesses in traditional approaches to assessment. Significant reform is therefore now essential. There is little value in ignoring AI or banning particular tools or technologies. These are oversimplified solutions to a complex set of problems and overlook what is already known about good assessment practice. As students graduate into a world where AI use is commonplace, they need to have had AI integrated into assessment as well as into learning and teaching in higher education in intelligent ways.

We take our starting point for this document from the propositions for assessment outlined in Assessment 2020 (Boud and Associates, 2010). This work outlines how assessment acts as a powerful intervention in student learning and highlights the educational purposes of assessment in parallel with the process of assuring learning outcomes. Good assessment design that allows for ‘rich portrayals’ of student learning is critical. Thus, we take as
given that assessment should engage students in learning, provide a partnership between teachers and students, and promote student participation in feedback. These key elements of assessment can then guide how best to consider the role of AI in assessment design.

In addition to the foundation of Assessment 2020, we also align specifically with the Higher Education Standards Framework (Threshold Standards) (2021) for assessment (particularly section 1.4) and academic integrity (section 5.2). Moreover, we adhere to non-negotiable principles underpinning an inclusive higher education system (see also section 2.2). These foundational principles include fairness, accessibility, transparency, equity, a right to privacy, and respecting students as individuals among diverse student cohorts, in alignment with the school sector (as per National Artificial Intelligence Taskforce, 2023). The right of students to be partners in their learning underpins all representations in this document. Given this position, we highlight the importance of ensuring learners are not disadvantaged by the inclusion of AI in assessment.

The development of AI technologies is proceeding at an unprecedented rate. This is therefore a document that is intended to be collaboratively reviewed and renegotiated with a range of stakeholders, including professional accreditation bodies. Our collective aim is to commence charting general directions forward, based on expertise, rather than predict every possibility on the horizon or provide prescriptive guidance. This is not a map of what may lie ahead but rather a compass to guide appropriate directions for assessment practices in higher education.

Guiding principles

These principles capture the essence of the considerations that are required for higher education assessment and AI. These principles, in combination with the non-negotiable foundations described in the preamble, form the foundation on which the key propositions are built.

1. Assessment and learning experiences equip students to participate ethically and actively in a society pervaded with AI

AI represents a catalyst for change unlike anything else in the past. It does not just influence how students learning can be assessed, it also influences what is worth assessing and, consequentially, what and how students learn. This necessarily includes the ability to use AI tools, as well as a broader understanding of the ethics, limitations, biases, and implications of AI.

2. Forming trustworthy judgements about student learning in a time of AI requires multiple, inclusive and contextualised approaches to assessment

There is no single assessment type that can account for all desirable and undesirable uses of AI by students. Using multiple assessments of different types, when triangulated, provides greater trustworthiness and allows for practices that are more inclusive.
Propositions

The following propositions outline the core areas of emphasis for higher education assessment that address a world where students will engage with AI, including generative AI during their studies. Graduates will also be expected to interact with AI in many of the professional and civic roles they will assume.

Assessment should emphasise...

1. ...appropriate, authentic engagement with AI

Assessment should encourage students to critically analyse AI’s role in, and value for, work and study, aligned with disciplinary or professional values. Assessment tasks should be designed to foster responsible and ethical use of AI in ways that are authentic to both the task and the discipline. Such engagement should be: meaningful, supported through explicit teaching across a program of study, and aligned with the program learning outcomes.

Learning to work with AI is rapidly becoming a necessary capability for graduates. If critical, ethical and productive engagement with AI is taught and integrated into assessment tasks in meaningful ways then students will regard it as an essential part of their university studies.

Examples:

A Bachelor of Commerce sets a digital mastery outcome for its graduates and develops a marketing subject on developing appropriate disciplinary capabilities with respect to generative AI. Assessment includes both a task developing appropriate generative AI prompts and a class presentation on the ethical and legal pitfalls of using large language models based on this task.

An assessment in a postgraduate engineering qualification requires students to use AI to design and create a robot. Associated documentation identifies the specific limitations and risks of using and not using the AI within specific design choices.

2. ...a programmatic/systemic approach aligned with discipline and qualification values

Assessment operates across a program of study and assessment design considerations should span a whole program, rather than be applied solely at individual task or unit levels. Assessment then becomes a matter of educational design, allowing for multiple methods, integrated tasks, and meaningful feedback/dialogue between educators and students to support judgements about progress and attainment.

A programmatic approach to assessment provides multiple means for educators to make judgements about student progress, without losing the emphasis on feedback and dialogue. These judgements can be captured or tracked over time as student knowledge and skill develops. This in turn promotes the trustworthiness of the overall award rather than relying on a series of singular, uncoordinated judgements.
Examples:

A physiotherapy degree maps out all its assessments to a series of clear graduated learning outcomes, that are supported by many small, graded tasks, including written tasks, engagement with clinical technologies including AI, observed clinical skills, interactive orals and supervisor reports on clinical placements. These tasks are collected, collated and analysed periodically using a portfolio (with a coach/mentor) to monitor attainment and progress towards a decision point.

A Bachelor of Arts develops an approach to assessment that spans the program of study but also allows cohesive ‘majors’ within particular disciplines. Overall learning outcomes are developed for disciplinary specialisations and for the program overall, and includes an outcome about digital mastery. Students experience a series of tutorials with many interactive orals integrated across key themes, becoming increasingly in-depth as the student majors in one or two disciplines. Tasks are aligned with program and disciplinary learning outcomes.

3. ...the process of learning

Evidencing the process of learning over time and in context can support a better understanding of learners’ sense-making processes, what they ultimately know and can do. Learning tasks should provide opportunities to reveal thinking, competencies and other qualities embodied in learning outcomes. Assessment tasks should provide opportunities for feedback on artefacts that reflect critical thinking, judgement, decision-making, including ethical decision-making, and reflection on the process; components of the process that AI is less able to simulate.

The assessment of artefacts is a problem in the context of AI because learning processes are inherently opaque to educators and often to learners. This results in difficulty identifying what has been created by humans and what has been created by AI. Where it is appropriate for artefacts to be created by both AI and students, the assessment design should provide clear opportunities to gather evidence where learners critically engage with the use of AI, demonstrate judgement in how to best use AI and reflect on the learning process.

Examples:

In a Bachelor of Science, the physics department seeks to break a large assessment into constituent parts and activities, showing changes over time. The students provide evidence of their critical thinking by revealing their decision-making, including dead ends and how the task relates to relevant practicals and tutorials. The assignment is a collection of evidence of student processes rather than a final artefact: the focus is on how the artefact is derived, not on how generative AI simulates its derivation.

In a postgraduate law subject, students undertake an essay assuming a position on a legal issue that iteratively builds on feedback from different sources: peers, self, teacher and generative AI. The explicit inclusion of generative AI requires students to distinguish between the credibility of the sources and to provide a specific rationale for their choices. The submitted assessment focuses on responding to this feedback and gathering evidence of the development of their judgement when forming a legal argument.
4. …opportunities for students to work appropriately with each other and AI

Assessment designs and judgements of student achievement should provide the opportunity for good quality collaborative work. This would include an articulation of, and design for, the acceptable ways students work with each other and AI. Students should describe and reflect on the role of people and technologies in how the collaborative work was carried out.

It is critical that students are able to collaborate appropriately with each other, with AI, and with other technological tools. A necessary condition for trustworthy assessment is articulating to students the boundaries of what is and is not permissible when working with AI. Through this articulation, collaborative practices can be highlighted that will support students to engage with each other and AI. Additionally, to ensure more inclusive assessment, access and/or capabilities for working with AI should not be assumed but incorporated into curricula. Moreover, through this articulation, collaborative practices can be highlighted that will support students to engage with each other and AI.

Examples:

In a journalism subject, the assignment brief articulates that a student can use generative AI to help with drafting the written response to the brief, but the student must explain what prompts were used, what ideas were generated and how the student then shaped the contribution of the tools used.

A Master of Interior Design has a capstone creative project. Students are asked to work with AI tools to produce a design brief and then assessors make judgements about both the nature and the productivity of the collaboration. As part of this task, students keep a diary or log of the collaborative process that is also assessed.

5. …security at meaningful points across a program to inform decisions about progression and completion

In many disciplines, there is a need to sometimes understand what students are capable of without AI. Rather than attempting to secure every assessment task against the use of AI, this proposition involves identifying the key assessment moments at a program level, and securing those. These assessment moments are likely to be related to program-level learning outcomes, and are important either to the student’s journey through the course, or to judging program completion.

Because assessment security of the type required to limit the use of AI is often resource-intensive, it is not feasible to apply these approaches to all assessments. There is a need to target this approach to where it will have the most impact – namely those moments of assessment that matter provide greater assurance that students who have been awarded the qualification have achieved the program outcomes.
Examples:

A Bachelor of Computer Science program team identifies the capstone project as a key moment for assuring learning for the degree. To secure the projects, academics meet with students across the study period and engage in interactive code reviews. To resource this change, the exam is removed from the first-year introductory unit, which is now 100% within-semester assessment.

A Bachelor of Science program team notices that, while they have exams in almost all first- and second-year units, there are none in the third year of the program, which is all unsupervised take-home tasks. This concerns the team, as the final year is tasked with certifying student achievement. The team decides to make a long-term plan to review assessment across the program to see how they could integrate a multi-method assessment approach for key assessment moments while maintaining security. The team remove some exams from the first-year and introduce an exam in one final-year unit per major. This results in fewer exams in the course overall, but more targeted assurance of learning.

Conclusion

The guiding principles and propositions outlined here are offered to help inform decision-making and action into the future. However, they are not a prescription and are agnostic to the mode of delivery. The ideas in this document should also be viewed in an integrated manner. An approach to assessment would incorporate all the principles and propositions rather than rely heavily on one or two. The ideas should also be considered at the program level and not just on a unit-to-unit basis.

As these technologies evolve, this document is intended to guide ongoing discussion and decision making and will be revisited and updated accordingly. These conversations will necessarily involve exploring the relationships between assessment, teaching, delivery mode, and learning within a complex, changing environment. To accommodate the reforms set out in this document, Higher Education Providers may also need to ask what they need to stop teaching and assessing, as some learning outcomes start to lose relevance or become infeasible to assess. Critically, a range of voices including students, educators, educational leaders, equity practitioners, educational technologists, educational designers, First Nations peoples, peak bodies, technology vendors, and professional accreditation agencies must be included in these discussions.

We recognise that change in assessment practices at the scale required will not be straightforward. There are workload and accreditation matters, among other complex issues that will be barriers to the changes implied in this document. There will be a widespread need to build academic and professional staff capabilities for working with AI. It should be recognised that AI also presents opportunities for enhancing practice, for example in feedback, in addition to the risks we have outlined and responded to in this document. Together, the sector can harness the opportunities offered in this time of change to enhance assessment design and to build a better higher education system emphasising partnerships, consensus and the importance of knowing and working alongside our students.
Process

This document is the culmination of a collaboration of experts in artificial intelligence, assessment and higher education in Australia. The document represents the key guiding principles and propositions arrived at through two days of discussion at a forum hosted by TEQSA and University of Technology Sydney in August 2023.

We wish to acknowledge and thank the following contributors who were involved in the development of the ideas in this document and in the design and delivery of the forum: Jaclyn Broadbent, Deakin University, Miriam Filippi, TEQSA, Gabrielle Gardiner, University of Technology Sydney, Kylie Readman, University of Technology Sydney, Lenka Ucnik, TEQSA, Suijing Yang, The University of Queensland.

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References


