



## Rethinking Assessment Strategies in the Age of Artificial Intelligence (AI)

Conventional assessment strategies like exams, essays and multiple-choice questions have traditionally been the fundamental means of assessing students' academic performance (Mislevy et al., 2012). However, with the growing accessibility of text generative artificial intelligence (AI) tools such as ChatGPT, it is imperative for higher education institutions to reconsider the efficacy of these approaches. While technology can significantly enhance the learning process, it also introduces the risk of undermining academic integrity. Universities must confront this challenge by devising strategies to safeguard against such misuse. Some recent studies suggest a move toward more continuous, authentic and adaptive assessments (Swiecki et al., 2022). In this paper, we present top 10 strategies with some practice examples to redesign assessment tasks in order to reduce the misuse of AI tools. In order to optimise the pedagogical results from these strategies, it is essential to ensure their alignment with pertinent Charles Sturt policies and guidelines, such as assessment policies and procedures, assessment design principles, and student workload guidelines, among others.

It is also important to consider the needs of neurodivergent students when rethinking assessment. The New Zealand Ministry of Education defines neurodiversity as including, but not being limited to, "dyslexia, dyspraxia, dyscalculia, dysgraphia, autism spectrum disorder, foetal alcohol spectrum disorder, attention deficit/hyperactivity disorder, trauma related disorders, and auditory visual processing disorders". The term encompasses learning needs across a spectrum of degree and intensity, including those who are 'twice-exceptional'; that is, they have more than one identifiable set of symptoms (Mirfin-Veitch & Jalo, 2020).

We must also be very careful, however, about making generalisations around types of assessments that might suit particular cohorts of learners; the aim is to continue to provide a "[d]iversification of assessment types through the course of a programme of study [that] provides all students with opportunities to excel, that is based on need, rather than disability diagnosis" (Hamilton & Petty, 2023). The strategies laid out in this document broadly meet these needs, but some of the examples might appear daunting or even opaque to individual neurodivergent students, particularly those with challenges around central coherence, executive function, or social anxiety. To address this, additional or alternative examples have been added where required, and in the transition to practice, teaching staff will be offered advice or professional development on ways to appropriately structure and explain the assessment tasks.

### Strategy 1: Emphasise the Learning Process

Shift the focus from grades to learning outcomes. Encourage students to view assessments as opportunities for growth rather than just a means to achieve high scores (Richardson, 2023). This process-centred approach focuses on assessing the actions and tactics students employ throughout their learning journey, which help improve critical thinking and self-reflection skills. Here are some assessment design ideas that emphasise the importance of learning process:

- Developing a group project: Students work on writing regular progress reports, conducting regular meetings with mentors/tutors and then preparing for final presentation. Look at this guide from UNSW for best practices in group work including guidelines on how to manage the process of working in groups. Also, review the Assessment - Conduct of Coursework Assessment and Examinations Procedure (Clause#23) to ensure that the design of group work is aligned with the procedure requirements.
- Developing a learning journal: Students record their learning experience in a subject and how they achieved subject learning outcomes through various learning activities and assessment tasks. Although the new LMS (Brightspace) does not offer a dedicated blog tool but it still provides journaling option through Private Discussions. Look at these helpful tips to learn more about developing a learning journal. It is worth noting that journaling exercise may prove

challenging for some individuals with social anxieties and challenge around understanding and/or expressing feelings. It may therefore be helpful to include some more linear prompts for more structured thinkers, for example, the step-by-step table below (McMahon-Coleman & Draisma, 2016, pg. 99):

### **Strategy 2: Incorporate Authentic Assessment**

Design assessments that require students to apply their knowledge to contemporary real-world scenarios or problems. Authentic assessments are more meaningful to students and demonstrate their ability to apply knowledge in practical situations. Authentic assessments are less susceptible to cheating because they test students' understanding rather than their ability to look up answers (Sotiriadou et al., 2020). To learn more about developing authentic assessments, see these resources from Notre Dame University and UNSW:

Here are some ideas for developing authentic assessments in a variety of disciplines:

- **Historical documentary:** Students create a documentary film or podcast that explores a historical event, period, or figure. They must conduct research, analyse primary and secondary sources, and present their findings. Check out this resource for some innovative alternative assessment strategies. It is worth mentioning that changing assessment may require changes to the teaching and learning strategies to ensure students are prepared to meet the requirements of the assessment task. For example, creating a documentary is a very different set of skills to writing an essay. Therefore, video and technology skills would need to be developed or supported through the learning of the subject to ensure students had the skills to undertake the assessment
- **Business plan:** Students develop a comprehensive business plan for a local startup, including market research, financial projections, marketing strategies, and an executive summary. Visit Business Queensland website to learn more about writing a business plan.
- **Engineering design project:** Students design and build a functional engineering project, such as a bridge, a robot, or a sustainable energy system, and present their design process and results. Look at this undergraduate engineering course from ANU for some innovative project ideas.
- **Journalism news story:** Students research and write a news story on a current event, incorporating interviews, fact-checking, and ethical reporting practices. Check out this collection of learning and teaching resources for news literacy.
- **Geographic Information System (GIS) Mapping Project:** Students use GIS software to create maps that analyse and visualize spatial data related to a specific geographic issue or question. This website highlights top ten educational benefits of using GIS.
- **Chemistry:** Ask students to develop an eco-friendly alternative to a commonly used chemical solvent in the industry where they would need to propose a research plan outlining the synthesis and testing of potential eco-friendly solvents, emphasizing safety, environmental impact, and cost-effectiveness. See this article to learn more about incorporation of Green Chemistry in an undergraduate organic lab.

### **Strategy 3: Promote Critical Thinking:**

Design assessment tasks or questions that encourage critical thinking and problem-solving. Ask students to analyse information, draw connections, evaluate arguments, or propose solutions (Saroyan, 2022).

Here are some assessment design ideas that promote critical thinking skills and reduce the misuse of generative AI tools:

- **Argument analysis:** Ask students to evaluate arguments or essays by identifying strengths and weaknesses in the reasoning, evidence, and logic presented. They should be able to articulate why they agree or disagree with the argument. Check out this resource from Monash University on how to use arguments to develop critical thinking skills.



- Case-based assessments: Present real or hypothetical cases that require students to analyse complex situations, make decisions, and defend their choices. This approach is common in fields like business, law, and medicine. For more information on developing case studies and scenario based assessments, see this useful resource from UNSW.
- Debate or discussion: Organise debates or group discussions where students must defend their positions using well-reasoned arguments. Require them to engage with counterarguments and evidence. To learn more about in-class debates and discussions, see this resource from Edith Cowan University.
- Role-playing and simulations: Engage students in role-playing exercises or simulations where they must think critically to navigate complex situations, such as diplomatic negotiations or business scenarios. For more examples, see this resource from UNSW.

#### **Strategy 4: Individualised or Personalised Assessments**

Create assessments with unique parameters for each student. This could involve student input or choice in developing the assessment topics. This will allow students to be actively involved in the assessment process and help them learn more about assessment task and understand its importance in their own learning (Keppel, 2014).

The following examples provide some ideas for personalised assessments from various disciplines:

- Art portfolio review: Students curate and present a portfolio of their artwork, discussing their artistic process, influences, and the thematic development of their work. Check out this link to learn more about developing an art portfolio and an article from a Charles Sturt academic about using art in teaching and assessment.
- Community needs assessment: Students conduct a community needs assessment, identifying and analysing social or health issues in their local community, and propose potential solutions. Here's an example of conducting a community needs analysis.
- Literary analysis essay: Students select a novel, short story, or poem of their choice and analyse it, discussing themes, character development, symbolism, and literary techniques. Check out this step by step guide on how to write a literary analysis essay. Monash University has also formulated some principles for writing a literary essay and the common mistakes students make during this process.

#### **Strategy 5: Live or Recorded Interviews or Presentations**

Consider conducting live or recorded interviews or oral presentations as assessments. This makes it difficult for students to use external resources without being detected.

The following assessment design ideas discourage the use of generative AI tools.

- Language immersion task: Students engage in a real conversation or perform a role-play scenario in the target language, demonstrating their speaking and listening skills and record this conversation for final submission.
- Multimedia presentation: Students create a multimedia presentation (e.g., a video, or a website) on a topic of their choice, integrating research, visuals, and effective communication skills. Look at these useful tips for creating multimedia presentations. To support neurodivergent student in your class, provide them the option to self-select the recorded presentation option if that suits them.
- Interactive oral assessment (IOA) is an authentic assessment approach that involves a genuine, unscripted conversation between an assessor and a student(s) framed around a workplace scenario (Sotiriadou et al., 2020). It provides an alternative to physical or online written or quiz-type exams. Griffith university has developed a useful resource on IOAs.

It is worth mentioning that oral assessments may provide their own unique set of challenges for neurodivergent students as they would need to deal with concurrent demands on cognitive, social and



emotional processing (Hand, 2023) while assessing and maintaining a tone appropriate to the genre “without becoming inappropriately or overly formal, or worse, familiar” (McMahon-Coleman & Draisma, 2016). There is also some research about appropriately supporting neurodivergent students attempting viva voce. One study argued for more preparation with this cohort—explaining the scenarios, who will do what, and what kinds of questions are likely—as well as spending time considering examiners who were likely to take a compassionate approach (Sandiland, MacLeod, Hall, & Chown, 2022). This suggests that the advice around execution seems to be more important than the type of assessment.

### **Strategy 6: Find Novel or Unique Ways of Designing Application-Based Questions:**

Focus on questions that require students to apply knowledge in unique ways, making it harder for them to find pre-written answers online or using text generative AI tools such as ChatGPT. This enquiry-based learning approach focuses on investigation and problem-solving (Deignan, 2009). Griffith University has also developed a useful resource on enquiry-based learning.

Here are some assessment ideas that promote unique ways of applying knowledge:

- Finance: Provide students with a scenario where they act like an investment analyst evaluating two investment opportunities: one in stocks and another in bonds. Ask them to research historical financial data and market trends before analysing the risk and return associated with both investment options. Ask them to provide a recommendation based on their analysis.
- Biology: Students act like a team of conservation biologists tasked with preserving a threatened species in a habitat where the area faces environmental challenges. Ask them to develop a conservation plan that includes habitat restoration strategies, population monitoring, and community engagement initiatives, accounting for ecological factors and sustainability.

### **Strategy 7: Peer Assessments**

Incorporate peer evaluations where students assess each other's work. This can help deter cheating, as students are less likely to cheat when assessing their peers' work. Peer assessment encourages active learning and students gain a deeper understanding of the subject matter and learning objectives. By assessing the work of their peers, students often engage in self-reflection and self-assessment. Peer assessment can also save instructors time in grading, allowing them to focus on other aspects of teaching and providing more timely feedback to students (Hauff & Nilsson, 2022). It can also work well for neurodivergent student if the task is well structured. Teaching staff will need to think about how the standards are set and benchmarked—a neurotypical student and a non-neurotypical student could potentially have very different ideas about what kind of feedback is encouraging, or how harshly to review.

Below are some examples of conducting peer review:

- Peer review of essay or report: Students review and provide feedback on each other's essays or written reports. They can assess factors such as clarity, organisation, use of evidence, and adherence to assignment instructions. This resource from Melbourne University explains the peer review process, it benefits and how to implement it with the use of technology.
- Group project evaluation: Each team member assesses the contributions and performance of their fellow team members. This can include evaluating their teamwork, communication, effort, and the quality of their work. In this article, (Vaughan et al, 2019) explore the peer assessment of team work in group projects by utilising a rubric. Check the Assessment - Conduct of Coursework Assessment and Examinations Procedure (Clauses#23 and 24) to ensure that the design of group or peer work is aligned with the procedure requirements.

### **Strategy 8: Frequent Low-Stakes Assessments**

Implement a system of frequent, low-stakes assessments throughout the teaching period. This can reduce the temptation to cheat on high-stakes assessments, as the overall grade is distributed across multiple assessments. Some obvious benefits of using low stakes assessments include continuous feedback, active



engagement, motivation and reduced test/exam anxiety (Warnock, 2013). Make sure that the development of such tasks are aligned with the Guidelines for Creating Student Workload.

This strategy is also considered the gold standard in inclusive education—a means of checking students' learning before the caravan moves on. Anonymous unmarked polls can be used in class as an example of setting up this practice. To address concerns around student or marking workload, small weekly quizzes can be used where the student can either choose which ones they want to be counted towards the final mark or have their lowest score removed. See below some examples of implementing frequent low-stakes assessment tasks:

- Weekly quizzes can be used to gauge students' understanding of the previous week topics. This feedback helps identify areas where students may be struggling, allowing for timely intervention.
- Students submit weekly journal entries reflecting on the assigned readings. These low-stakes assignments encourage active engagement with the material and personal reflection.
- Students complete short writing assignments on local or current topics throughout the semester. These small assignments contribute to their overall grade, motivating students to stay engaged with the course content. To learn more about some concrete strategies for frequent, low-stakes assessment strategies, check out this useful resource from Carnegie Mellon University.

### **Strategy 9: Promote Creativity and Problem-solving**

Integrate tasks that demand creative problem-solving abilities by involving students in practical or hands-on projects that necessitate the creation of inventive solutions and unconventional thinking (Cardamone, 2023). Such measures help build skills that are hard to replicate by AI tools.

The following assessment ideas promote creativity and discourage the misuse of generative AI tools.

- Ethical dilemma analysis: Present students with a complex ethical dilemma and ask them to analyse the situation, explore various ethical theories, and propose a morally justifiable solution. See this article to learn more about solving an ethical dilemma.
- Creative writing: Provide students with a creative writing prompt that challenges them to think outside the box. Encourage them to craft an original short story, poem, or screenplay that showcases their imaginative storytelling skills. Check out these creative writing exercises for strengthening writing skills.
- TED-style talk: Have students deliver a TED-style talk on a topic of their choice, emphasising innovation, creativity, and the presentation of novel ideas to an audience. Watch this YouTube video from Chris Anderson to learn TEDs' secret for great public speaking. For neurodivergent students, provide the option to record or otherwise, to help ease a range of anxieties.

### **Strategy 10: Integrate Real-life Situations and Practical Experiences**

Establish links between the curriculum and present-day situations, emphasising practical relevance and reconnecting with the human aspect of education, something generative AI tools can't handle very well. Create avenues for students to interact with experts in relevant fields by conducting informational interviews, engaging in work integrated learning, and gaining firsthand experiences. Inviting industry professionals into the classroom to impart their knowledge, real-life encounters, and viewpoints foster a lively exchange of thoughts and perspectives. As students apply their understanding in real-life scenarios, they cultivate competencies that are beyond the capabilities of AI tools to reproduce (Montagnino, 2023).

Here are some examples of integrating real-life experiences in assessment design:

- For students completing work or industry placements, ask them to submit reflective essays or presentations that connect their classroom learning to real-world experiences. Such experiences are personal in nature and depict present-day situations hence can't be reproduced accurately using AI tools. Check this guide from Victoria University for enhancing the educational outcomes of work integrated learning.



- In law classes, students can participate in moot court or mock trial exercises where they argue real legal cases, applying legal principles and courtroom procedures. The University of Queensland have developed a useful resource for their students about the mooting process.





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