AUTHENTIC ASSESSMENT & FEEDBACK

# Perspectives on redesigning assessment practices in an AI world

## Foreword

Artificial Intelligence (AI) has become a significant force in higher education, with far reaching impact, particularly in how we assess and evidence student learning. This year I was asked to share my perspectives as part of panel sessions at the EUNIS and AAEEBL conferences based on my interest in and experience of assessment transformation.

There is already a substantial body of literature on this subject, with a field that is fast evolving. In this paper, I aim to provide one perspective, shaped through conversations with educators across the globe. It doesn't attempt to cover all aspects of the debate, but is more a snapshot in time, based on these conversations.

It also draws on a recent global survey conducted by our PebblePad team in May 2023. This comprehensive survey engaged 200 educators, spanning diverse roles such as teaching staff, learning design, educational technologists, senior leaders, and departmental managers. The survey also included an anonymous student questionnaire that collected input from 1500 students in the US, Australia, and the UK.

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# The challenge

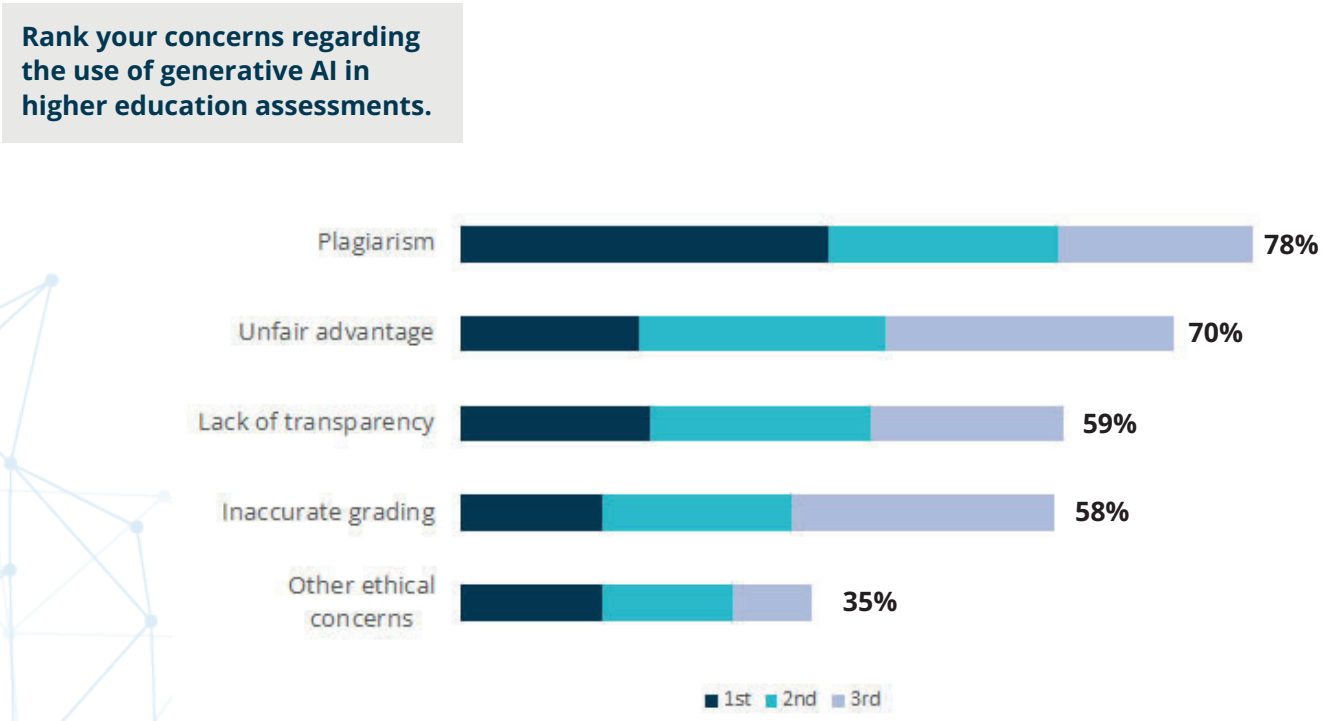
Given the challenge generative AI tools are posing to our traditional assessment practices, there is understandably much fear and concern. Our survey[1] suggested over one-third (36%) of educators ranked plagiarism as their foremost concern, apprehensive that generative AI could potentially compromise the integrity of academic work and undermine the authenticity of student outcomes, a sentiment which has been echoed by many.

But like many commentators[2], at PebblePad we see these developments as just another reason to do what we should be doing anyway – considering how we can design better assessment tasks that are more authentic, meaningful and relevant in the context of preparing students for challenging, dynamic and fast-evolving futures. The way we assess students has a key role to play in preparing learners to be future ready.

And this is a challenge that is being increasingly recognised. We've seen this in conversations we've had with colleagues in the UK, US, Australia and Canada, with many looking to better prepare students for this future, with the skills, capabilities and professional mindsets for success.

> *"Assessing knowledge recall alone in the absence of its application in context is no longer going to work in the AI world. We have to start focusing on the development, and better evidencing, of the higher order skills that will set students up to better navigate this complex world."*

**Chart 1 | Educator Survey: Rank your concerns regarding the use of generative AI in higher education assessments.**



# The assessment landscape

We're in a really interesting time with a number of (often competing) pressures around the assessment space. One of the primary challenges is that traditional assessment practices aren't best preparing learners for future success in our fast changing digital world, or reflective of the way that learners will continue to be assessed as they move through their careers.

A landscape report[3] published by Jisc in 2012 showed assessment practices were highly devolved, inconsistent, and with a lack of a development focus. There was an over reliance on traditional types of assessment (such as essays), and an over emphasis of assessment **of**, rather than assessment **for**, learning approaches. Feedback was problematic, in terms of quality, consistency and timeliness. Learners were often seen in a passive role, rather than empowered through the process. It seems these practices are proving quite resistant to change.

Through the pandemic we saw a move to alternative approaches which yielded some benefits, for example, open book exams, which have been shown to be a more inclusive and reflective of real life practices. But we are now also seeing a desire by some to 'go back' to more traditional methods (or 'avoid' according to the Jisc classification[4] of higher education's response to AI) – for example, to invigilated exams, a trend exacerbated by the rise of AI and the challenges posed to academic integrity. But there's perhaps a better way forward, to both embrace and perhaps outsmart these tools.

# What are the benefits emerging from the use of generative AI in education?

There are many reported potential benefits and uses for both staff and students that are still emerging – for example to help with revision; articulating concepts in a range of ways to support better understanding; for developing foundational knowledge outside of class to free up time for deeper learning in class; for providing opportunities for feedback; and the creation of content, reducing workload. In one recent podcast[5], a research student with autism explains how they began using generative AI as a 'research assistant', to help polish their language, critique perspectives and clarify tasks - and even to suggest relevant journals for publishing work to.

Indeed, our survey reported that 84% of educators said they thought the use of generative AI, used either by designer or learner, might positively impact assessment tasks, including generating ideas for tasks and testing the validity of assessments by asking AI to respond to it. The key words here are 'appropriate' and 'assisting' – not replacing.

However, it's important that we acknowledge that it is early days in terms of whether we have actual evidence of the value to learning (see researcher Helen Beetham's analysis[6] of the literature to date). And to benefit student learning – students need to know how to use these tools critically, with tasks designed to maximise active, not passive use of the tools. By doing this we will be better able to prepare students to critically approach and innovate with these tools in the workplace.

The potential for providing opportunities for feedback is particularly interesting – the value of approaches such as self and peer assessment for student learning, and in developing their evaluative judgement and self-regulatory skills, have been advocated by many researchers (e.g. Boud and Molloy, 2013)[7]. Recent research by Professor David Nicol from the University of Glasgow develops these ideas further. His active feedback model[8], discussed in a recent podcast[9], provides a powerful way for tools such as ChatGPT to be used to enhance student learning, and one that resonates well with portfolio practices.

Essentially, in this model students are firstly asked to **do** some work individually. They then **compare** their work against information in relevant comparator resources and reflect on what they have learnt from that process by **writing their own feedback comments**. They then discuss this feedback with peers, which also elicits feedback comparisons and new learning. They end by formulating **feedback requests** for their teacher. David sees huge value in this approach – with the value not just being in improved work, but in the development of students' critical thinking. For example, students might produce a practice example and then compare it to a theoretical model and write their own feedback on the extent to which their work was grounded the theory. David's colleague Jennifer Rose at the University of Manchester reports[10] seeing higher levels of intellectual development from doing activities like this.

And in terms of AI, this model suggests that AI could be used by teachers to create resources of different kinds for comparison, with the feedback outputs from these comparisons written so that the process of learning is surfaced. Peer discussion and dialogue with teachers could then be used to amplify, contextualise and enrich the learning deriving from these comparisons. This is a wonderful example of how AI tools can be used critically and actively to enhance student learning.

# What capabilities do staff and students require to be able to make appropriate use of generative AI in education and how might we support them with the development of these skills?

## Information literacies

There are some parallels here with the information literacies that were so key to helping students navigate the web using the early search engines. Students need to have the critical literacies to frame the right questions, to critique the outputs (developing evaluative judgement), and also importantly ethically use the responses.

Dr. Popenici from Charles Darwin University talked recently in a PebblePad webinar[11] about a New York Times article reporting how, in Finland, they are teaching a generation from primary school up how to spot misinformation. So, we need to engage students with the problem, not avoid it. Stefan talks about the importance of students becoming 'expert prompt engineers' who can create meaningful answers with accurate references – the capabilities they will need to respond to, and innovate in, a world with AI. Helen Beetham suggests in this blog post[12] that we need to go further – helping students not just critique outputs, but to engage with the underlying frameworks and business models and technologies to better understand bias, risk and impact.

And importantly, we need to build these literacies into the learning outcomes of our assessments, and not just assume they are learning these through use. There is excellent guidance[13] from the CRADLE team at Deakin University which discusses this, along with other useful insights.

## Assessment literacy and greater transparency

We can't forget we also need to help our students (and staff) better understand what the purpose of assessment is (developing their 'assessment literacy'). We expect students to understand the intention behind our assessment and feedback practices, but rarely do we provide opportunities for dialogue with students to surface assumptions and provide clarity around these practices. For example, if students have a clearer understanding that the purpose of assessment and feedback is to demonstrate their own learning and development and to develop their evaluative judgement, and not simply to produce a product (for example an essay), they may be less likely to see tools such as ChatGPT as the solution to that task.

And we also need to recognise we should be more transparent in the way we talk about all aspects of the educational process. For example, the process and expectations we have around all aspects assessment from grading structures, to what we mean by terms such as seminars or dissertations. As students themselves have raised at recent conversations, we can't assume students know these things, particularly those whose formative experience was situated in very different assessment models (for example, international students).

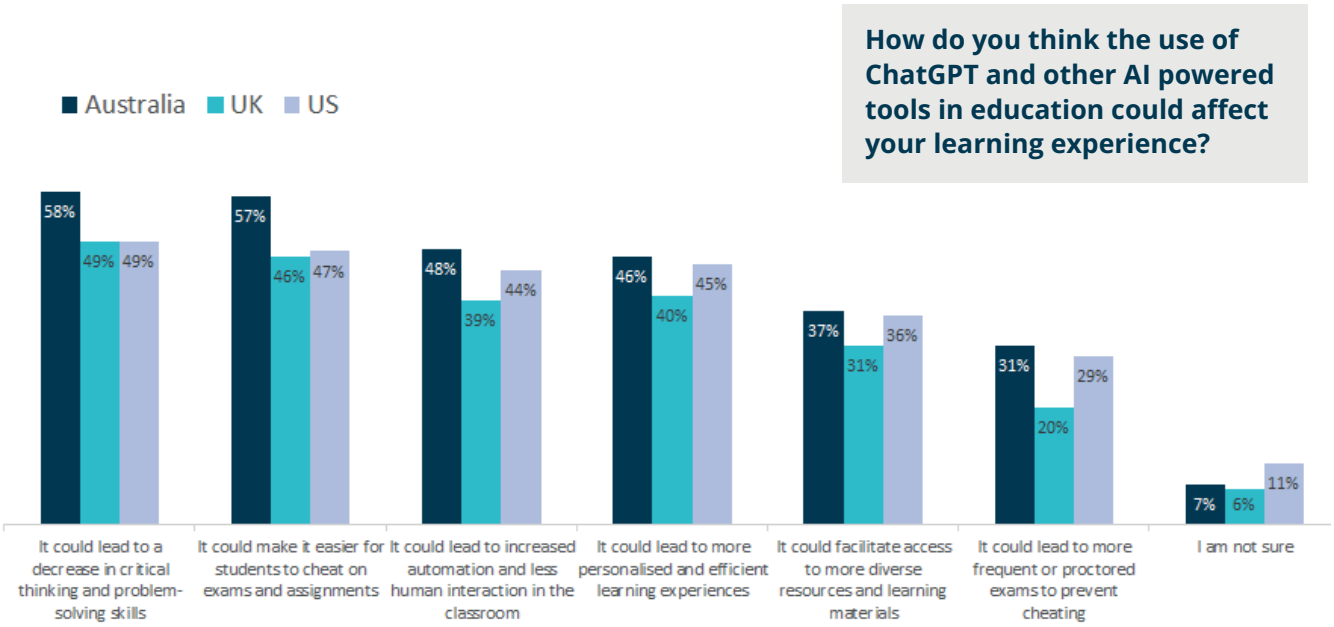
# How are students responding to the use of AI and what can we do to support them to understand the risks and benefits of use?

Many potential benefits are being discussed and are emerging, but one important thing to remember is that not all students have equal access to these tools. At a recent event, one colleague reported survey findings from her university suggesting one third of all students weren't currently using AI, echoed by our own survey findings, which found of 24% students were 'not very familiar' with it. So, there's an equity issue around how we ensure everyone has equal access, so all can benefit from the potential opportunities these tools provide.

As Helen Beetham highlights in this insightful blog post[6], students are also raising concerns around inaccuracy and bias, the ethics around AI development, and 'a pandemic of 'cheating' that threatens the value of their studies'. Our survey echoed this - showing students were concerned about the potential of AI to reduce human interaction, decrease critical thinking and problem - solving, facilitate cheating, and impact on accuracy and fact-checking. Helen also makes the important point that often when new tools come along, they often 'just help well-resourced learners to pull further ahead' – echoing the pressing need to help learners develop the foundational and critical skills to ensure the learning gain is seen by all.

In terms of how we can support students to understand the risks and benefits – one single approach won't work. We need a holistic multi-factor approach - what Philip Dawson from the CRADLE team refers to it in one blog[14] as the 'swiss cheese approach'. This includes having more open discussions around what academic integrity is and why it's important, and what will/won't breach it; making it clear when use of AI is appropriate/inappropriate; having conversations around the purpose of assessment; and getting students to engage critically and in a scaffolded way with AI so they can experience what ethical use looks like. What is clear is that detection tools are unlikely to be the answer to this problem (see for example this recent research paper[15]). Reassuringly only 11% of educators in our survey felt they could be.

**Chart 2 | Student Survey - How do you think the use of ChatGPT and other AI powered tools in education could affect your learning experience?**



# So how might we better design assessments in the light of the AI challenge?

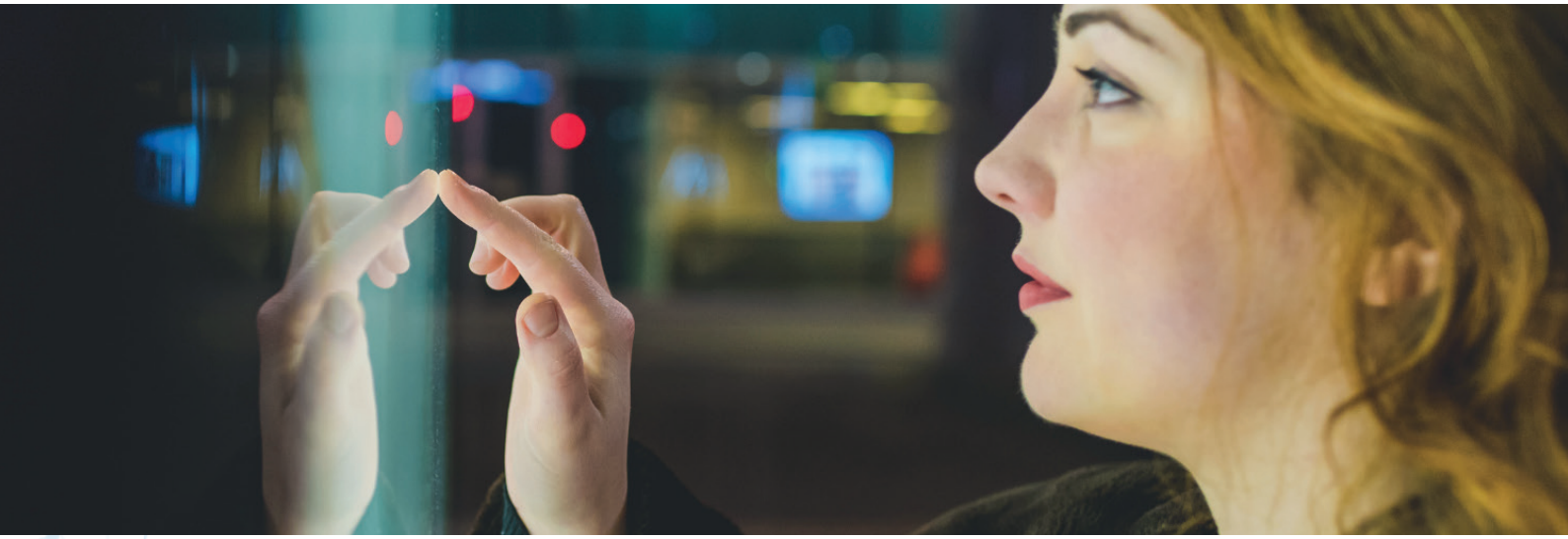
Drawing on what we know about good assessment design, and eportfolio processes and practices, we can summarise the following key points:

### 1. Set clear expectations

Firstly, we set our response in the context that **students don't often set out to cheat** – Professor Emily Bender[16] from the University of Washington argues that 'if students are turning to some fallback... the problem was upstream' – i.e. in the design of the assessment. It's often because students don't understand what's expected of them, or have left tasks to the last minute. So, ensuring they are clear on expectations, and what 'good' looks like is key. And it's useful to consider here the value of peer and self-assessment - where students not only engage with criteria, but apply them to others' work and their own, developing key skills in evaluative judgement.

### 2. Focus on surfacing process

Secondly – and perhaps most importantly - we need to move to assessments that focus on **surfacing the process**, not just the product of learning. Professor Rowena Harper, DVC (Education) at Edith Cowan University, talks eloquently on this in a recent CRADLE webinar[17] - about the need to reposition away from 'artefact based assessment' (ie essays/reports), the product that we use to infer student learning - to one which allows us to more directly 'observe, guide and assess the process of learning itself'. So, for example more portfolio-based assessment, with a focus on formative learning and personalised feedback. And that we need to '.... interrogate when, why and how we ask students to reproduce existing knowledge: what must they know to enact higher-order thinking, and what can remain at their fingertips'. David Nicol, in this podcast[9] agrees, talking about the need to focus on thinking processes, not products.



### 3. Build in from the start

Which relates to the third and fourth points – that **assessment shouldn't be something that is just done at the end**, with no line of sight from the setting of the assignment to receiving the end product, but is integral to the learning process; something that happens throughout and is designed in from the start, in an iterative way.

### 4. Create opportunities for dialogic feedback

With regular, **formative opportunities for dialogic feedback and improvement** (teacher, self and peer) throughout, the **product is seen as it evolves, and the individual's thought process made explicit.** We heard at recent Jisc and AAEEBL events from teachers who talked about the importance of 'better knowing our students', enabled through these portfolio processes.

### 5. Apply the knowledge through authentic tasks

With a focus on **authentic tasks** that ask students to **apply the knowledge** they have gained in **meaningful** contexts, celebrate uniqueness and personal experience, and better prepare learners for how they will be assessed in the real world. Of course, 'authentic' is highly contextual to the discipline and learning outcomes required, but just as one example, James Cook University[18] have business students engaged in collaborative group projects, focused on solving employer-led problems. The process of learning is surfaced through a group portfolio which includes reflection on the group's and each student's own performance.

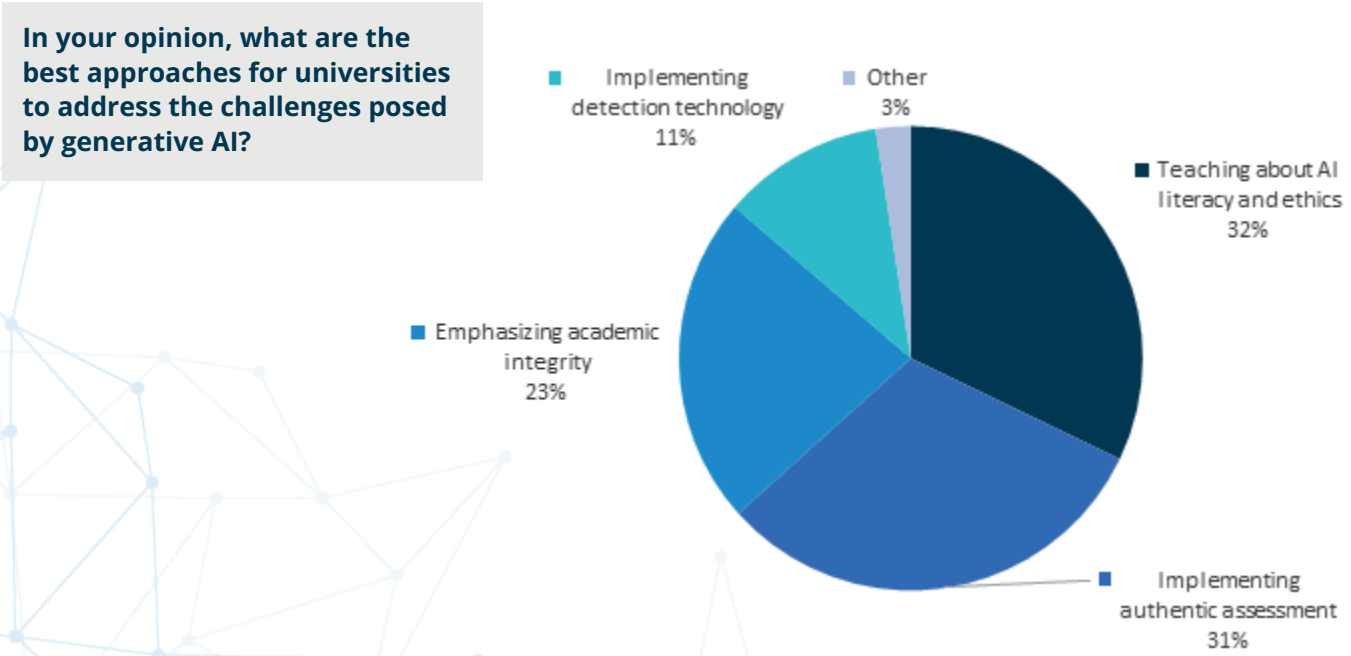
Our survey suggests that 31% of educators already see authentic approaches to assessment as being part of the solution, though it also suggests we may still have some way to go.

### 6. Opportunities for co-creation with students

And ultimately, the goal is to work towards opportunities for co-creation with students, so that they have ownership over the process itself – as in the wonderful SLICCs example[19] developed by the University of Edinburgh, also taken up by the University of Waterloo, where a credit-bearing framework is in place for academics to use that enable students to co-design their own research project, contextualise learning outcomes, undertake an experience and present the findings in a choice of formats. This is a great favourite example – students are not only learning what 'good' looks like by engaging with the criteria, developing original thought, creativity and other higher order skills, they are also developing autonomy and agency by creating their own questions and choosing how to best evidence their learning.

Through assessment design that aligns to the above, opportunities for cheating are minimised, as the individual's learning is surfaced throughout; the tasks are meaningful to students and aligned to the learning goals; connection is made with teachers; and through ongoing opportunities for reflection, evaluative judgement and self-regulatory skills are developed. As Rowena Harper put it in a post[20] – 'a tool will present one view of the world: we need students who are empowered to articulate theirs'.

**Chart 3 | Educator Survey - In your opinion, what are the best approaches for universities to address the challenges posed by generative AI?**



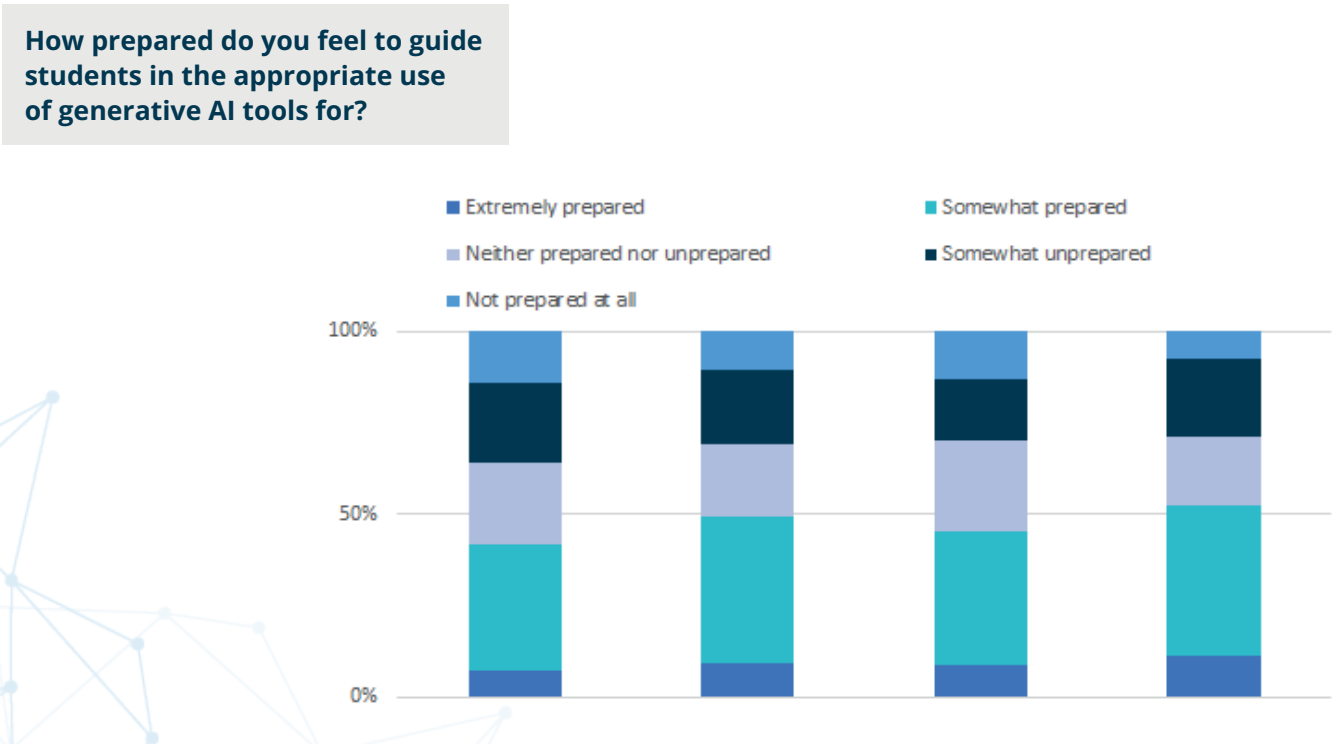
# What one thing could universities do to support the use of AI in assessment?

We've known for a long time about effective assessment, and the role of effective portfolio pedagogies and practices within that, but we still haven't seen the transformative practice happening as fast as we might hope in all areas. And this is because it's hard to do, and staff already have many competing pressures on their time and in the curriculum.

In terms of staff preparedness to rethink assessment practices, our survey shows that there is definitely work to do - with around 27% of educators feeling somewhat unprepared or not prepared at all, with nearly half feeling somewhat prepared. Only 50% felt completely, somewhat or fully prepared to help students use AI effectively in their studies, with 48% feeling the same level of preparedness to help students consider the ethical issues of use.

> *For universities to spend time asking questions of their assessment strategies – it requires vision, time, space, and support for staff. And this isn't something for educators to solve alone, but in collaboration with others – with learning designers, library colleagues and students themselves.*

**Chart 4 | Educator Survey - How prepared do you feel to guide students in the appropriate use of generative AI tools for?**



Encouragingly, this need for collaboration was welcomed in our survey – with 85% of educators recognising that involving students in conversations around how AI is used was extremely important. The benefits to institutions and student alike have been well evidenced elsewhere (see the Jisc Change Agents Network[21] for a wealth of resource), with institutions benefiting from student ideas, ensuring solutions meet their needs, and empowering students and the development of key transferable skills in the process.

**Chart 5 | Educator Survey - How important do you think it is to actively involve students in the conversation around generative AI ?**

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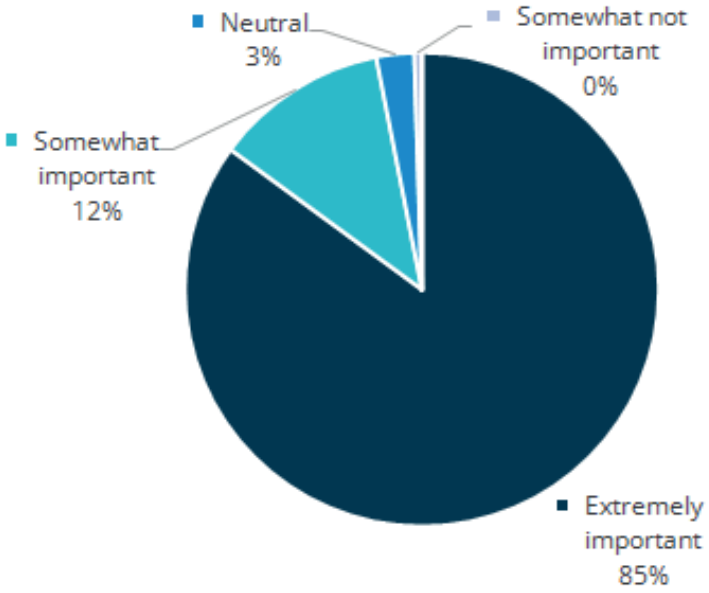


So, we need to think hard about how staff could be enabled and empowered to ask these difficult questions - not only to tackle the risks to academic integrity we've seen, but also better develop and evidence student learning, and better prepare students for success.

And it's useful to be reminded that there are practical resources out there that can help support assessment redesign and place good assessment design at the heart of the conversation, for example the principle-led approach[22] to assessment design recently updated by Jisc, and practical Viewpoints workshop materials[23] developed by the University of Ulster – approaches that were both inspired by Professor David Nicol's Reengineering Assessment Practices[24] (REAP) project.

## Further reading:


- CRADLE (2023) Assessment and GenAI. Accessed 23.08.23
- Jisc (2023) A Generative AI Primer Version 1.1. Accessed 23.08.23
- Jisc (2022) Principles of good assessment and feedback: how good learning, teaching and assessment can be applied to improving assessment and feedback practice. Accessed 23.08.23
- PebblePad (March 2023) webinar Redesigning assessment for an ever-changing world. Accessed 23.08.23
- PebblePad (May 2023) ChatGPT challenges, Ideas to combat academic integrity issues by PebblePad's Pauline Porcaro. Accessed 23.08.23
- QAA (2023) ChatGPT and Artificial Intelligence. Accessed 23.08.23

# Endnotes


1. PebblePad Educator & Student Surveys. May 2023. See Appendices
2. For example in ChatGPT: students could use AI to cheat, but it's a chance to rethink assessment altogether (theconversation.com). Accessed 23.01.23
3. A view of the Assessment and Feedback Landscape: baseline analysis of policy and practice from the JISC Assessment and Feedback programme - Jisc Repository, Published 2012. Accessed 24.08.23
4. According to A Generative AI Primer - National centre for AI (jiscinvolve.org), Published May 2023. Accessed 24.08.23
5. Campus: How to use generative AI in your teaching and research | Campus by Times Higher Education (podbean.com), July 2023. Accessed 24.08.23
6. GenAI opportunity and risk - by Helen Beetham (substack.com) 26 June. Accessed 29.08.23
7. Boud, D., and E. Molloy. 2013. "Rethinking Models of Feedback for Learning: The Challenge of Design." Assessment & Evaluation in Higher Education 38(6):698–712.
8. Nicol, D. 2022. "Turning Active Learning into Active Feedback" National Teaching Repository.
9. Campus: How to use generative AI in your teaching and research | Campus by Times Higher Education (podbean.com), July 2023. Accessed 23.08.23
10. Jennifer Rose – Active feedback introduction, June 2023. Accessed 23.08.23
11. Webinar Recording Request: Redesigning Authentic Assessment (pebblepad.co.uk), March 2023. Accessed 24.08.23
12. Writing as academic practice in an time of Generative AI - By Helen Beetham (Substack.com) 28 June. Accessed 29.08.23
13. CRADLE suggests: assessment and genAI, 2023 report. Accessed 23.08.23
14. How to fix the fascinating, challenging, dangerous problem of cheating | EduResearch Matters (aare.edu.au), July 2022. Accessed 23.08.23
15. Testing of Detection Tools for AI-Generated Text (arxiv.org) June Accessed 30.08.23
16. Emily Bender on KIRO7 ChatGPT 123022 - YouTube, December 2022. Accessed 23.08.23
17. TEQSA/CRADLE webinar (March 2023): ChatGPT: how should educators respond? Accessed 23.08.23
18. James Cook University Case Study - Multidisciplinary Projects (pebblepad.co.uk) Accessed 23.08.23
19. PebblePad SLICCs Webinar Recording, Accessed 23.08.23
20. Rowena Harper LinkedIn (20) Post | Feed | LinkedIn, Accessed 23.08.23
21. Jisc Change Agents' Network – A network of staff and students working in partnership to support curriculum enhancement and innovation (jiscinvolve.org). Accessed 23.08.23
22. Principles of good assessment and feedback - Jisc Accessed 23.08.23
23. Workshop Toolkit - Viewpoints - Confluence (atlassian.net) Accessed 23.08.23
24. Principles_of_good_assessment_and_feedback (reap.ac.uk) Accessed 23.08.23