Pearson

Assessment Evolved

Redefining Formative Assessment in a Generative AI Era

Generative AI is reshaping education and assessment. As classrooms adapt, formative assessment is at a crossroads.

Drawing on surveys of 1,000 US and UK educators and insights from global experts, this report explores how thoughtful GenAI integration can deepen reflection, enhance feedback and maintain learning integrity.

Contents

Evolving assessment in a generative AI era

As GenAI becomes embedded in education, we have an opportunity to evolve formative assessment practices to make them stronger than ever before.

The arrival of Generative Artificial Intelligence (GenAI) has been an inflection point for many aspects of society, and assessment is no exception. Media headlines often frame GenAI in terms of academic dishonesty, with institutions scrambling to respond. Understandably, many have reacted apprehensively, emphasising surveillance and resistance.

Students do not appear to share this hesitation. Adoption is widespread and accelerating. Many are already using GenAI for schoolwork, regardless of whether their institutions explicitly allow it or not. At the same time, there is considerable uncertainty about what constitutes academic misconduct. But the deeper issue is not whether students are cutting corners, it's whether they risk missing out on essential future knowledge and skills, if they do not learn to work with GenAI responsibly and effectively.

Our research focuses on formative assessment as a critical area of both disruption and opportunity, because of its vulnerability to GenAI misuse and potential for innovation. Drawing on the views of over 1,000 educators and a panel of global experts, we believe that now is the time to remind ourselves of the purpose of formative assessment, to consider richer forms of evidence, and to develop new approaches that prepare students for lifelong learning in a broader landscape of AI disruption.

> The rhetoric of 'AI is for cheating' is so loud that the greater ethical concerns underneath are either being ignored, or not acknowledged… The deeper reason why academic integrity breaches are so scary right now is the fear that kids will start devaluing the role of education, the role of learning."
>
> **Amanda Bickerstaff**
> Chief Executive Officer
> AI for Education

The purpose of our report and educator guides:

To empower stakeholders to harness GenAI to evolve assessment and support students in cultivating future-ready skills, we developed two resources from this research:

1 This report

Explores why formative assessment matters now more than ever and offers evidence-based insights and recommendations to help educators, leaders, and policymakers respond to these changes

2 Educator Guides

For **School** and **Higher Education (HE) educators.** These guides move from discussion to action, providing tangible strategies and practical advice for teachers and instructors, helping them evolve their assessment practices with confidence.

For some educators, the question may be **where to start;** for others who are already actively experimenting with GenAI, the question may be **knowing how to do so effectively and responsibly in their classrooms.**

> As educators, the question for us is to think about how we can help our students engage thoughtfully with this new reality that we find ourselves in and help them to realize that developing their own capabilities is still really important as humans."
>
> **Danny Liu**
> Professor of Educational Technologies
> University of Sydney

Our research

To understand what GenAI means for the future of formative assessment and learning, it's vital to first know its current impact.

Our research includes views from

- **More than 1000 educators** from secondary schools, colleges, and universities in the United States and United Kingdom in our AI and Formative Assessment survey, and
- **A range of global experts** in education and AI, including expert practitioners who use GenAI in their classrooms.

The research focused on three key questions

1. How should we design assessments in a world where GenAI tools are ubiquitous?
2. What kinds of tasks can still authentically demonstrate student understanding, even when AI is accessible?
3. How do we ensure formative assessment maintains its utility and validity when AI can simulate students' work?

We focused our research on formative assessment in: **Secondary education** (US Grades 6–12/ UK Key Stages 3–5) and **higher education,** as these groups are **most likely to experiment with and adopt GenAI tools for learning.**

"I wanted to break this binary - AI good, AI bad; it's much more complicated than that. What may work in some cases is not going to work in others... Centering the teacher in the class or experience is essential, because if the kids trust you, they're going to listen to you. Or at least they're going to respect what your view is, whether they follow it or not."

Steve Fitzpatrick
K12 Educator and AI Practitioner
Hackley School

What emerges is a picture of how educators are navigating this moment, which we can use as a starting point for preparing students for an AI-integrated world.

We provide recommendations as a call-to-action for school and higher education leaders, policymakers, and administrators, so that educators are fully supported to deliver the best learning outcomes for their students. We also outline practical steps to experiment with assessment, scaffold AI literacy, and develop or evolve policies, presented as detailed, practical guidance provided in our Educator Guides for School and Higher Education.

The critical role of formative assessment

Our research has made one thing abundantly clear: formative assessment is fundamental to good teaching and effective learning. Ensuring GenAI strengthens reflection, feedback, and understanding will allow it to become a partner, rather than a substitute, for learning.

Formative assessment: A cornerstone of effective learning

The importance of formative assessment is widely recognised and empirically supported across education settings.[1,2,3]

Formative Assessment encompasses:

Assessment for Learning (AfL)
Which provides educators with crucial information during the learning cycle to adapt instruction and feedback to students to foster self-regulated learning; and

Assessment as Learning (AaL)[4]
Where the assessment activities themselves serve as valuable learning opportunities.

These differ from Assessment of Learning (AoL)

Which is classed as summative assessment and typically takes the form of high-stakes exams. Formative assessment is often essential in preparing students for summative assessment.

ⓘ Our emphasis on formative assessment in this report **does not imply that summative assessment is any less important** in a GenAI world. In fact, when the learning and assessment ecosystem is in flux, having reliable measures of student outcomes is of critical importance.

> **"Where am I going, where am I now? Where do I go next – How do I close the gap?"** That's a practical instantiation of the regulation of learning cycle. You start with a goal, and then a learner engages and regulates their cognitive, affective and behavioural resources in pursuit of that goal, and is supported by feedback along the way."
>
> **Dr. Susan Brookhart**
> Professor Emerita in the School of Education
> Duquesne University

The purpose of formative assessment: Questions that drive learning

Formative assessment is concerned with answering three key questions - with students as partners in the process.

1. **Where am I going?**
   This typically comes from a model of student outcomes or set of learning goals.
2. **Where am I now?**
   This requires a way of estimating students' current knowledge and skill relative to their final destination.
3. **How will I get there?**
   This calls for feedback about the next best step in closing the gap.

Educators may use a diverse array of activities to foster this continuous cycle of learning, constructive feedback, and sustained improvement, while encouraging student autonomy in the process.

This idea underscores the pivotal role feedback plays in shaping meaningful learning experiences

> Feedback isn't just an important thing on its own. It's probably the mechanism that underpins a lot of other effective practices in education, and it's probably the active ingredient in formative assessment...When we use the word feedback, we refer to a process in which students make sense of information about their performance and use it to improve their work or their learning strategies."
>
> **Philip Dawson**
> Co-Director of the Centre for Research in Assessment and Digital Learning
> Deakin University

What does students' use of GenAI mean for assessment?

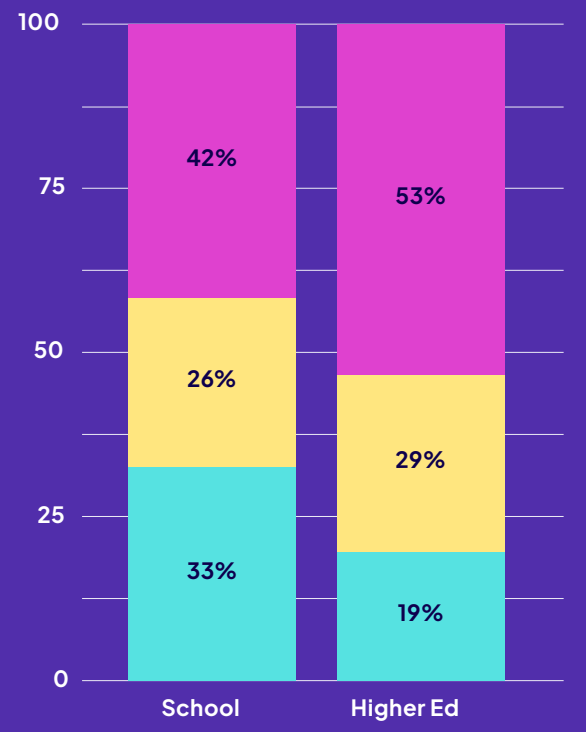
Research shows different levels of awareness and engagement by three core groups: institutions, students and educators.

Many **institutions** are yet to enact formal policies on GenAI, with only **54%** of K-12 and **60%** of higher education instructors in our survey reporting an AI policy at their school or institution. Moreover, some educators are still on the fence about GenAI. Although at least **85%** of both educator groups were at least moderately familiar with GenAI[5], only **50–58%** felt positively toward it[6]. This indicates there is still a need for formal guidance on how to adapt or respond to student GenAI use, especially as the technology expands and evolves.

Furthermore, **students** are using GenAI more than educators perceive. **69%** of higher education instructors we surveyed estimated that fewer than half their students use AI for "at least some" formative assessments. This contrasts with what students self-report. Our previous research[7] found that **64%** of students use GenAI for schoolwork, with **80%** of those using it at least once a week. And use is climbing rapidly; in the UK alone, a recent study[8] found that the proportion of university students using GenAI tools for assessments jumped from **53%** in 2024 to **88%** in 2025. The most common uses of GenAI were to: "get answers to my questions/clarify concepts" (**60%**), "edit or proofread writing assignments" (**51%**) and "get answers to homework problems" (**48%**).

As a result, **educators** are clearly concerned by what they are seeing. Our survey revealed that **68%** of schoolteachers and **82%** of HE instructors expressed moderate to high concern about students' use of GenAI to complete assignments when it was expressly prohibited. Given the pace of change, there is a need to provide educators with both the tools and the confidence to proactively lead the way.

Concern about GenAI misuse on assessments



Note

This question was displayed to those who did not allow GenAI use on at least one assessment in their course (n = ~230). Question: "How concerned are you that your students are using GenAI to help complete formative assessments where it is not allowed?" Responses: Not at all concerned, Slightly concerned, Moderately concerned, Very concerned, Extremely concerned. The top and bottom two responses were collapsed to "high concern" and "low concern" respectively.

*Percentages may not total 100% due to rounding

> AI demands a unique urgency. No previous technology has matched its scale or speed of impact, and our education system simply isn't designed to keep up."
>
> **Pat Yongpradit**
> Chief Academic Officer of Code.org and Lead of TeachAI

Can detection and deterrence work?

A common question from educators is:
Can't AI detection solve these issues?
The short answer is no.

AI detectors are tools that analyze text, pictures, or video to determine whether it was created by a human or by AI.

However, research suggests that these AI detection tools cannot reliably identify all AI-generated content.[9,10,11] And students are becoming more proficient at AI prompting to evade detection. These factors mean that a reliance on detection risks eroding the essential trust between educators and their students. Ultimately, detection is no substitute for well-designed assessments that guide responsible AI use.

The solution lies in ensuring educators themselves are familiar with, and confident in the use of GenAI tools. This is a vital step in ensuring the focus is on learning integrity, not policing (mis)use. Exploring AI tools firsthand is important to demystify their capabilities, potential and impact, and to move towards meaningful classroom integration, and many educators are already harnessing these tools in their teaching.

> "It's overwhelming, and it's daunting… If you haven't played with a large language model, it's going to be really, really hard to both talk to your students about it and make a value judgment about what it's useful or not useful for."
>
> **Steve Fitzpatrick**
> K12 Educator and AI Practitioner
> Hackley School

> "We've moved from educators feeling very confident 18 months ago that they would be able identify AI writing in their students' work - and they probably could, if they knew their students - to now, it is really much more difficult to detect."
>
> **Rachel Evans**
> Director of Digital Transformation
> Girls' Day School Trust

> "First of all, there's a lot being made of false positive rates being very low… as if given a 1% false positive rate, there must be 99% true positives. And that's simply not the case. Moreover, from my perspective, the problem with detectors are that they do not generate any evidence, and it leads to procedural fairness problems. Once someone sees that number provided by the detector, they will believe that the student used AI, and so they will be biased throughout any subsequent process, based on that inaccurate and misleading detector result."
>
> **Kane Murdoch**
> Head of Complaints, Appeals and Misconduct
> Macquarie University

The need to build AI literacy and future-ready skills

Educators understand that as the education ecosystem continues to recover from Covid-era learning loss, unreflective use of GenAI risks compounding existing learning gaps by allowing students to short-cut important learning experiences.

As agentic features (capabilities that allow AI to act autonomously, sometimes with minimal human oversight) become more widespread, it is becoming even easier to reduce learning to a task-completion exercise. This creates an illusion of understanding but leaves students with very real flaws in their foundational knowledge and critical competencies.

Effective use of GenAI as a learning partner requires students to engage their own knowledge structures by drawing on internal mental models and frameworks to critique, refine and build on AI outputs[13]. These processes of recalling, spotting mistakes, and connecting ideas are needed to build lasting memory and flexible knowledge. Without guidance on using GenAI responsibly and intentionally, students risk accepting plausible yet incorrect or inaccurate outputs at face value.

Conversely, when students are guided to activate these internal systems, GenAI can be a force multiplier for formative assessment, by supporting self-reflection, feedback and deeper understanding.

In practical terms, this may look like building the habits of routinely questioning GenAI outputs, consulting external sources, or seeking alternative perspectives on a topic to augment, not replace, active sense-making.

ⓘ **Our survey participants identified several risks of problematic GenAI use for formative assessments including:**

- Allowing students to bypass the cognitive processes and effort essential for learning.
- Hindering development of skills such as problem-solving, research, writing and critical thinking.
- Risking students being underprepared for a workforce that demands fluency with AI tools.
- Flattening experimentation, agency, and originality of thought.

With deliberate formative assessment design, educators can position GenAI use as a collaborative endeavor that carefully balances AI interactions with students' own judgement and discernment.

These are the skills that will be needed for today's students to navigate future employment opportunities, as will the ability to summarize, ideate and create with and without access to those tools.

In our survey, around **half of educators reported they are actively integrating GenAI tools** to design learning activities (**57%** school , **60%** HE), plan lessons (**54%** school, **52%** HE), and design assessments (**43%** school, **56%** HE)[12].

> The more that we can be in the space of allowing people to use the tools, helping them learn how to use AI effectively, and then holding them responsible for the content - I think it's a much better world to be in than trying to prevent use...These tools are a reality. Why would we train somebody not to use the tools that they're going to use for the world of work?"
>
> **Ryan Baker**
> Professor of Artificial Intelligence and Education
> University of South Australia
> and Director of the Penn Center for Learning Analytics

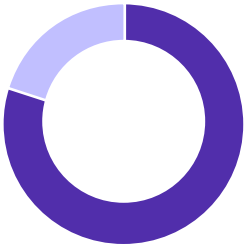
> How do I motivate my students and how do I teach them that this is the right way to interact with AI? How do I embed these interactions as part of my formative – and, in the future, summative - assessment of their learning?
> This is the direction that we are working towards. To me, that's a much more realistic vision than considering AI as a 'no-no' technology."
>
> **Mutlu Cukurova**
> Professor of Learning and AI
> University College London

Learning at the center: Evolving formative assessment

GenAI is transforming how students engage with formative assessment. The challenge is not to discard familiar methods, but to evolve them so they continue to measure meaningful learning.

Our survey highlights the centrality of formative assessment to effective learning, with 80% of instructors told us they use formative assessment at least a few times per month, and the same proportion rated it as extremely or very important.

However, the most common formative assessment activities, such as multiple-choice questions, essays, or short writing assignments, were also seen by educators as among the formats most vulnerable to GenAI misuse.

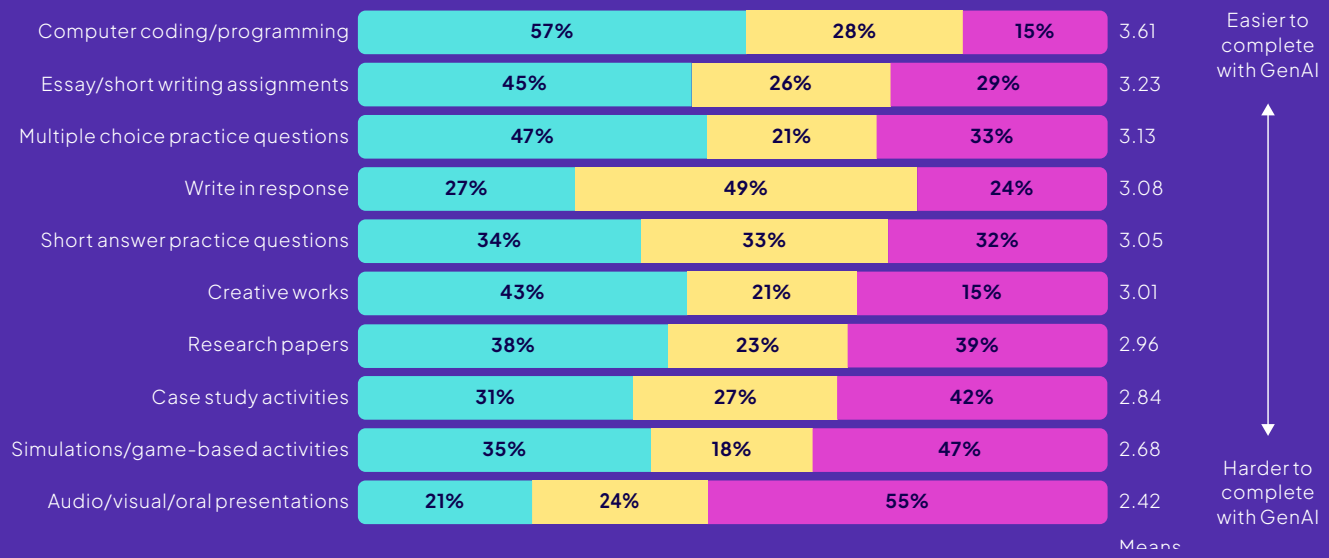


80%

of instructors told us they use **formative assessment** at least a few times per month

Coding, writing, and multiple-choice assignments are most vulnerable to GenAI misuse, while presentations are more resistant

How easy would it be for the students you teach to complete these assessments using GenAI?



Response options included:

1 = not at all easy, 2 = slightly easy, 3 = moderately easy, 4 = very easy, 5 = extremely easy. 1 & 2 were condensed into "not very easy" and 4 & 5 were condensed into "very easy" for visualization and simplicity. Order from highest to lowest was based on means. Instructors only rated assessment types they reported using in their courses (Ns varied). "Write in response" refers to an assessment type that a survey participant wrote in themselves, as it wasn't provided in the listed options; responses varied.

This finding doesn't mean that educators should stop using these types of activities. Rather, it highlights a need to evolve and innovate them, so they still deliver learning value. This is where the real opportunity lies. Fortunately, educators have the expertise to ensure pedagogy continues to sustain critical thinking and meaningful knowledge acquisition.

> "Visualize the knowledge dimension as declarative, procedural, conceptual and epistemic… we need to teach less on the declarative and procedural levels, and more on the conceptual, epistemic levels. That's why AI is capable of acing legal exams or medical exams, because they're mostly memorization. The beauty of AI is that it has shone the spotlight on the inadequacy of past assessments which conflated memory and intelligence."
>
> **Charles Fadel**
> Founder and Chairman
> Center for Curriculum Redesign

A new narrative: Designing for learning integrity

Now, more than ever, it is critical to revisit the purpose of formative assessment. Educators already know what the key questions are, now it's a matter of applying that knowledge to these new tools:

1. What do I want to assess, and does the task elicit evidence of that learning?
2. Does completing this task require the skills I want students to develop?
3. Will the misuse of GenAI compromise its learning value?
4. Could allowing or inviting thoughtful use of GenAI enhance its learning value?

By reinforcing the connection between purpose and practice, these reflections can prompt a shift towards richer evidence-gathering or necessitate the redesign of formative assessment activities.

> "Bring the learning outcomes in from the very start. What is it that you're trying to achieve here? Can AI help to achieve those learning outcomes? If students use generative AI tools as part of that work, is that going to undermine the learning outcomes or is it going to help them?"

Mike Perkins
Head of the Centre for Research and Innovation
British University Vietnam

> "It's an opportunity to really deeply ask those questions; what do I want my students to know, and how will I know that they know that? In fact, when you ask those questions, you may realize that a written essay wasn't actually what you wanted them to know. It wasn't really very good evidence that they knew the thing in the first place."

Eric Klopfer
Professor, Director of the Scheller Teacher Education Program and Director, The Education Arcade Massachusetts Institute of Technology

The future of assessment

Education must move towards thoughtful inclusion of GenAI in assessment design, broader evidence of learning, and policies that align curriculum, instruction, and assessment to the skills needed for the future workforce.

Teaching in the age of GenAI: Making change happen

The only thing we can say with confidence about GenAI technologies is that they will continue to expand, both in terms of their power and prevalence. What began as primarily text-based chatbots has rapidly expanded to include image, video, audio, code, data analysis tools, and more.

In an age where AI is becoming an integral part of learning and the workforce, we need to provide educators with tools to maintain learning integrity while preparing students for a world where AI will be a defining part of their future.

> What capabilities do we need to ensure our graduates have right now, and next year, and the year after that? I think the answer to that is that we're not sure. But it probably looks slightly different to what it was 10 years ago. The interplay between GenAI and assessment needs us to go back to our learning outcomes and look at what exactly it is that we want our students to develop, and be, and do and know, and start from there."

Danny Liu
Professor of Educational Technologies
University of Sydney

Pearson's Educator Guides: A practical companion

To support and partner with educators, we have created Educator Guides for School and Higher Education. These guides provide specific strategies for levelling up formative assessments in ways that maintain their value, with actionable advice to help educators evolve their practice.

Recommendations: **Purposeful action to support educators**

Bold, collaborative action is needed for proactive, future-ready formative assessments.

To ensure educators are supported to evolve formative assessment and to equip students with the skills they need, change must happen at all levels of education, with practical action from all stakeholders involved in assessment policy, design and delivery. School and higher education leaders, policymakers and administrators must not only support teachers and instructors as they embrace GenAI but also ensure the evolution of assessment is meaningful and sustainable.

Action from school and higher education leadership

The focus of school and higher education leadership in this context is on providing opportunities and facilitating dialogue with, and among, educators to move from policy to action and implementation.

We recommend that leaders in school and higher education settings support evolution in these areas:

Policy

Ensure AI integration initiatives are designed, reviewed and implemented thoughtfully and in partnership with educators.

Training

Provide opportunities for educators to continually develop their familiarity with and confidence in their own use of GenAI tools.

Broader Ecosystem

Facilitate discussion in their schools and/or departments about the impact of GenAI on curricula and instruction. Encourage collaboration within teaching teams to reflect on and evolve their teaching and assessment practices.

Action from local and national policymakers

State and federal education agencies in the US and the Department for Education in the UK should focus on supporting systemic change in three areas:

Policy

Lead on AI strategy and guardrails in schools and higher education, with regular opportunities for review and evolution as GenAI develops.

Training

Ensure educators have access to initial training, with ongoing professional development focused on GenAI to understand its capabilities and its limitations, and how they – and their students - can best use specific GenAI tools for particular pedagogical aims or contexts.

Broader Ecosystem

Recognize the need to teach and assess GenAI literacy (or fluency) with new academic content standards for responsible and ethical use of GenAI (or revising existing ones) and aligning summative assessment accordingly.

> It's an opportunity. It's something that we probably should have been doing for a long time… I think there's going to be some disruption in terms of existing assignments, learning modalities, and thinking about the way we teach about learning... I think providing more open-ended assessment and feedback to students in real time [will benefit education]. I think there's a lot of really exciting opportunities."

Eric Klopfer
Professor, Director of the Scheller Teacher Education Program and Director, The Education Arcade Massachusetts Institute of Technology

The future won't wait, and neither should we.

With courage and creativity, we can use this opportunity to make education stronger, more resilient, and future focused. Our students are ready – and they're counting on us to be ready, too.

References

1 Sortwell, A., Trimble, K., Ferraz, R., Geelan, D. R., Hine, G., Ramirez-Campillo, R., Carter-Thuiller, B., Gkintoni, E., & Xuan, Q. (2024). A Systematic Review of meta-analyses on the impact of formative assessment on K-12 students' learning: Toward sustainable quality education. Sustainability, 16(17), 7826. https://doi.org/10.3390/su16177826.

2 Education Endowment Foundation. (2025). Feedback. Education Endowment Foundation. https://educationendowmentfoundation.org.uk/education-evidence/teaching-learning-toolkit/feedback.

3 Morris, R., Perry, T., & Wardle, L. (2021). Formative assessment and feedback for learning in higher education: A systematic review. Review of Education, 9(3), e3292. https://doi.org/10.1002/rev3.3292.

4 Bennett, R. E., & Gitomer, D. H. (2009). Transforming K–12 assessment: Integrating accountability testing, formative assessment, and professional support. In J. P. Keeves & R. E. Watanabe (Eds.), Educational assessment in the 21st century: Connecting theory and practice (pp. 43–61). Dordrecht, Netherlands: Springer.

5 Question: How familiar are you with Generative AI (GenAI) overall? (K–12 n=505; higher education n=524).

6 Question: How do you currently feel about the use of AI (of any kind) in education? (K–12 n=505; higher education n=524).

7 Pearson Education Ltd. (2025c). Higher Ed student AI survey report. Retrieved from: https://plc.pearson.com/sites/pearson-corp/files/2025-05/student-ai-tracker-spring-25-short-version-for-external-sharing.pdf.

8 Freeman, J. (2025). Student generative AI survey 2025 (Policy Note 61). Higher Education Policy Institute. https://www.hepi.ac.uk/reports/student-generative-ai-survey-2025/

9 Bassett, M. A., Bradshaw, W., Bornsztejn, H., Hogg, A., Murdoch, K., Pearce, B., & Webber, C. (2025). Heads we win, tails you lose: AI detectors in education. https://doi.org/10.35542/osf.io/93w6j_v1

10 Bellini, V., Semeraro, F., Montomoli, J., Cascella, M., & Bignami, E. (2024). Between human and AI: Assessing the reliability of AI text detection tools. Current Medical Research and Opinion, 40(3), 353–358. https://doi.org/10.1080/03007995.2024.2310087.

11 Hardie, L., Lowe, J., Pride, M., Waugh, K., Hauck, M., Ryan, F., … Richardson, H. (2024). Developing robust assessment in the light of generative AI developments. NCFE and The Open University.

12 Question: To the best of your knowledge, have you ever used gen AI in your teaching and/or assessment? (K–12 n=505; higher education n=524).

Acknowledgements

We would like to sincerely thank the educators who responded to our survey or generously gave their time to be interviewed for this project. Your thoughtful responses and perspectives have been invaluable in shaping this work.

Ryan Baker, Professor of Artificial Intelligence and Education, University of South Australia and Director of the Penn Center for Learning Analytics.

Peter Bannister, Pre-doctoral Fellow, Universidad Internacional de La Rioja.

Amanda Bickerstaff, Co-Founder and CEO of AI for Education.

Susan Brookhart, Professor Emerita, School of Education, Duquesne University.

Mutlu Cukurova, Professor of Learning and AI, University College London.

Phillip Dawson, Co-Director of the Centre for Research in Assessment and Digital Learning, Deakin University.

Rachel Evans, Director of Digital Transformation, Girls' Day School Trust.

Charles Fadel, Founder and Chairman, Center for Curriculum Redesign.

Steve Fitzpatrick, K12 Educator and AI Practitioner, Hackley School.

Eric Klopfer, Professor, Director of the Scheller Teacher Education Program and Director, The Education Arcade, Massachusetts Institute of Technology .

Danny Liu, Professor of Educational Technologies, University of Sydney.

Bill Lucas, Professor of Learning and Director for the Centre of Real World Learning at the University of Winchester and Co-Founder of Rethinking Assessment.

Kane Murdoch, Head of Complaints, Appeals and Misconduct, Macquarie University.

Mike Perkins, Head of the Centre for Research & Innovation, British University Vietnam.

Pat Yongpradit, Chief Academic Officer of Code.org and Lead of Teach AI.

Pearson

This report marks the beginning of an important conversation on how assessment can evolve in the GenAI era. We welcome your thoughts and feedback. Reach out to us at assessmentevolved@pearson.com

Learn more at
plc.pearson.com/assessmentevolved