

The next iteration of learning tools in school

Using AI to benefit teaching and learning

Forward

Education Perfect's mission has always been to maximise every student's potential. One way we are doing this is by continually improving the way we do things. For example, we've recently implemented automations to enhance our platform's functionality behind the scenes. But now we're taking things to the next level by introducing secure, trustworthy and intuitive AI experiences to the Education Perfect platform.

This is not about AI for AI's sake. We are committed to delivering genuinely useful and meaningful AI-led learning experiences for students. We also recognise that the teacher is the expert, and have designed each AI capability to empower teachers in the classroom, not replace the important work they do.

We're putting this new AI functionality right where students and teachers need it most - into their learning flows. This intentional design aligns with educational best practices, offering easy-to-use interfaces, accessible language and pop-up navigation to seamlessly navigate users through their learning journeys. And we're building these AI capabilities on a

secure, trusted infrastructure so that you remain in full control of your data.

This paper sets out how we are bringing the benefits of AI to students, teachers and the learning environment. We share our guiding principles and identify the possibilities and potential risks of using AI in education. We also walk through our research that has been foundational for us to truly understand what schools want, and realise what we can make possible.

We are excited to share the new ways we are applying AI to make a difference in the classroom.



Jonathan Morgan
CEO at Education Perfect

"We are committed to delivering genuinely useful and meaningful learning AI-led experiences that maximise every student's potential."

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AI in the classroom

The way we teach and learn is changing. And AI, in its many forms, has enormous potential to transform learning and contribute to improving educational outcomes. But it also brings risks and challenges.

The possibilities and potential of AI in education

Personalised and interactive learning

Make use of AI-powered recommendations to tailor learning experiences to individual student needs, fostering engagement and mastery.

Creativity and innovation

AI can inspire creativity by offering new perspectives and automating routine tasks, freeing up educators time to focus on knowing and growing their learners.

Adaptive learning and immediate feedback

Put AI-driven adaptive learning systems to work providing personalised instruction tailored to individual student needs, while offering targeted feedback to guide learning progression in real-time.

Accessible and inclusive education

Enhance accessibility by suggesting personalised learning pathways and adapting content to diverse learning styles and needs.

Administrative efficiencies

Leverage AI-driven automation and predictive analytics to streamline administrative tasks and allow educators to focus more time and resources on teaching and learning.

Data-driven insights

AI algorithms can analyse vast amounts of data at a rate far surpassing humans, uncovering patterns and trends, and empowering educators to make data-informed decisions and optimise learning outcomes.



AI as a powerful resource for teachers

The primary role of AI in education is to enhance teaching and learning by providing valuable insights, personalised support, and innovative tools. While AI may be capable of automating certain tasks performed by teachers, its fundamental purpose remains to augment and improve the teaching and learning process, not replace it.

The best use of AI is as a tool that empowers deeper and richer conversations between teachers and students, complementing the role of the teacher and aiding in the facilitation of effective learning. In addition to the knowledge within large language models, teachers and schools want the ability to contribute to the content.

AI-supported teaching tools should:

- Support human interaction and cooperation, which is so central to the educational experience
- Complement the expertise and role of teachers in facilitating learning.



AI-assisted learning for students

For students, it's important that AI does not blur the lines between assistance and completing the work independently. Rather, it should enhance learning experiences by providing guidance and personalised feedback to assist students in developing critical thinking and problem-solving abilities - through fostering a deeper engagement with the subject matter.

By using AI in this way, students can take an active role in their learning journey while benefiting from the assistance and insights AI offers.

Student-focussed AI tools should:

- Support learning without overshadowing students' own efforts and critical thinking
- Balance the benefits of AI assistance with the importance of student engagement and independent learning

The current state of AI in education

AI is already here

60%

of educators are already using AI in their classrooms*

Academic dishonesty

65%

of educators cited plagiarism in student work as their top concern*

AI and efficiency

71%

of US higher education institutions say improving efficiency is the key driver for AI*

AI as a competitive differentiator

99%

of US higher education institutions say AI is instrumental to their institution's competitiveness in the next three years**.

Classrooms of the future

60%

of educators say that in the future AI will be used more widely, but not as a central component

What can we learn from ChatGPT?

Some feared it heralded an “*educational apocalypse*”, others saw it more as “*the reboot education sorely needs*”*. Either way, ChatGPT and AI more generally, is redefining education.

Teachers have raised valid concerns regarding the integration of AI in the classroom, particularly in tasks such as essay writing where plagiarism is a real concern. While AI tools like ChatGPT offer new ways to learn, there is a risk that students may rely too heavily on AI-generated content, blurring the lines between assistance and independent work.

At Education Perfect, we understand the value of integrating AI into education while acknowledging the potential impacts and challenges. Within our learning platform, it has been incorporated to enhance the learning experience while ensuring academic integrity. By using AI responsibly, Education Perfect seeks to empower students to learn independently, supported by our AI-powered features.

* Source: [Wired](#)

In some circles, plagiarism is generally regarded as a symptom of a larger problem. An essay written for the National Library of Medicine back in 2013 sums this idea up nicely:

“However, plagiarism is not only an issue of student assessment. It is a symptom of a deeply entrenched academic culture that arguably places tangible rewards (grades, diplomas, publications, promotions, grants) above the intrinsic value of learning and knowledge creation.”

* Forbes (2023), Artificial Intelligence In Education: Teachers' Opinions On AI In The Classroom. [Available online.](#)

** Microsoft (2020), Assessing U.S. Higher Education Sector's AI adoption and Capabilities. [Available online.](#)

Education Perfect's guiding principles



Human centred

We believe AI enables, not replaces. We have always committed to putting teacher and learner needs at the centre of our design and will continue to do so as our technology advances—from empowering usage, to supporting change in this space.



Private & secure

With new opportunities, comes new challenges. Our top priority is the safety of our users' data and well-being, as well as maintaining alignment with all governing standards & policies on digital safety in education.



Meaningful

We are committed to going beyond the buzz around AI. We believe in delivering new technologies thoughtfully, taking a holistic view of the problems facing teachers and students to provide the very best solution - however it's delivered.



Accessible & inclusive

We see emerging technologies as a great equaliser, and we are excited about the possibilities AI opens in supporting diverse student needs. We are committed to leveraging the power of emerging technologies to build more inclusive learning environments.

The evolution of Education Perfect

See how we've transformed the Education Perfect platform from its inception as a language learning tool into the comprehensive educational platform it is today, with a focus on personalised learning augmented with AI.

2009: Education Perfect launched with engaging language learning tool infused with gamification and inspired by our founder's experience in a French classroom

2014: We broadened our focus to include other subjects in the curriculum, drawing on insights gained from language learning.

2014-2018: We transitioned from primarily focusing on vocabulary learning to one that deeply engages students in core subjects such as English, maths, history, geography, and languages.

2018: To better support teachers in delivering effective personalised instruction, we shifted from rote learning to adaptive lessons and formative assessments.

2018- 2023: The platform's appeal broadened internationally with the introduction of global curricula.

2024: New integrated AI capabilities were introduced to enhance adaptive learning and support deeper, open-ended questions with immediate and specific feedback.

Future: By adding AI specialists and dedicated teams, we plan to continually expand adaptive learning capabilities - in conjunction with teachers and curriculum specialists - and enhance the platform's capacity for personalised student instruction and teacher insights.

Our research-based approach to AI development

Deep and considered research with educators

We're working to develop AI responsibly to benefit the entire education community. Core to this approach is connecting with, and listening to the people who use our platform every day. This has always been our fundamental approach to developing and improving the Education Perfect platform. That experience has served us well and has never been more important than now as we look to understand how we can best harness the power of AI to create enriching, personalised and adaptive educational experiences. Our research teams have gathered feedback from teachers and students, and we will continue to engage these stakeholders on our AI journey due to the complex and ever-evolving space that AI occupies.

What our research tells us is most important to schools

Management and Mitigation of AI use

We understand that advanced technologies can raise important questions that must be addressed clearly. The schools we spoke to said they wanted strong safety and security measures to ensure that AI systems are used effectively, ethically, and in line with relevant regulations and guidelines. Therefore, our AI features should incorporate privacy principles and be appropriately cautious to minimise potential risks and negative consequences.

Reducing teacher workloads

Our research reaffirmed what we already knew - AI should augment, not supplant, teachers. Schools want AI tools that provide support and assistance to streamline tasks and enhance the overall teaching experience. Teachers would welcome AI tools that could assist with, for example, brainstorming ideas for classroom activities, or generating lesson plans. In other words, educators

want to use AI technologies that allow them to focus more on personalised instruction and student engagement, and less on administrative burdens.

New learning opportunities for students

Schools told us they are interested in AI's potential to improve learning outcomes and help all students succeed. There is recognition that AI is helping make learning more accessible and inclusive. But it can also radically improve student engagement and overall learning experiences. For example, during interactive AI-enabled conversations, students can ask questions, seek explanations, and receive prompt answers. Real-time interactions like these not only facilitate deeper understanding but also foster critical thinking and active participation.

Perception of open-ended chatbot LLMs among educators

When we asked our global customers about their perception of open-ended chatbots, we uncovered some common and positive perspectives:

- Some regard it as a beneficial tool similar to a calculator, while others advocate for its prohibition
- There's comfort in its application for specific tasks such as research or grammar revision
- The majority had an immediate interest in our LLM, inquiring about its compatibility with their existing materials.

It's also important to recognise that with free LLMs currently used by students online, their interactions and data are likely harvested by the tech companies providing them, posing a risk to students' privacy.

Introducing our new AI Powered Feedback Tool



After many months of iterative development and improvement, closely informed by feedback from teachers and students, we're excited to share the first instalment of our vision of an AI Learning Companion which will eventually aid the student on every step of their learning journey.

Our learning companion is driven by an inference system deeply grounded in curriculum and lesson content, with a Large Language Model (LLM) at its core. Today it provides personalised, timely feedback to students as they're answering questions in Science, English, History, Geography and Languages. For teachers, it is able to identify common misconceptions amongst their students and suggest ways they might address these. In the future we will also expand this to other parts of our platform, for example supporting students as they engage with new concepts and ideas in our information slides, allowing them to ask for clarification or simplification of lesson material.

Our learning companion delivers:

- **Real-time feedback:** Annotations, comments and recommendations delivered to students in seconds.
- **Iterative Improvement:** Motivates students to deepen their understanding and improve their responses.
- **In-context:** All feedback is surfaced within existing EP lessons, based on the lesson content.
- **Teacher Insights:** *(coming soon...)* Take more effective action with new insights into your students' learning journey.



Student perspective

While complex algorithms work in the background, it's dead simple for students to use. The learning companion sits within the normal EP learning workflows and is hyper-focused on student learning rather than being open-ended and potentially distracting like standard chatbot systems.

When students respond to an open-response question, the learning companion provides personalised feedback on their response. Students not only receive corrections, but are also encouraged to deepen their understanding of the concepts and skills being taught in the lesson. If students don't quite understand any of the comments, they are able to ask for more detail or clarification, empowering them to address misunderstandings and improve their knowledge. A star rating system, showing improvement from first to last attempt, is additional motivation.



Teacher perspective

Teachers will be able to assign and review Tasks on Education Perfect as normal, but will now have AI Insights embedded into their Task Completion Reports.

Previously, teachers would have had to spend hours sifting through student responses to identify common mistakes or misunderstandings from their more challenging, open-ended extended response questions. Now, this understanding is available with just a click. Our goal is to empower teachers with a deeper understanding of their class and to enable them to better target small-group interventions for the students who need them the most.



Personalised suggestions

Generated by AI

Things you've done well:

- Recognising homologous structures
- You've recognised that different species can have similar bone structures, which is a key concept in understanding homology

Things to work on

- Explain how homology supports evolution
- You haven't explained how homologous structures provide evidence for evolution through common ancestry

Aligning our principles and goals with our new AI Powered Feedback Tool

How we apply our AI Powered Feedback Tool to make a tangible difference in the classroom



Meaningful

Our new AI tool goes beyond just 'providing answers'. Students are progressively coached through the learning process and encouraged to explore explanations related to feedback. They are supported to iterate and improve their responses as they build deep understanding of topics.



Human-centred

The tool is designed with the learner in mind. By easily achieving first-line individual instruction for the whole-class, and collecting the insights into each student's learning journey, teachers can focus their expertise on identifying and addressing both individual gaps and common misunderstandings.



Safe & secure

Complying with the latest government guidelines for AI use, and protecting student data is our top priority. The tool is also built to ensure student answers stay relevant to learning outcomes and promote healthy and appropriate input.



Accessible & inclusive

Education Perfect's coaching tool is available on demand - in class or at home. This gives every student 24 hour access to individual instruction and works with Education Perfect lessons that students already know and love.

Trialling the AI Powered Feedback Tool with students



We conducted user testing with a sample of 114 students from within the existing Education Perfect user-base in Australia and New Zealand. The focus of this testing was for feedback on the platform's usability and effectiveness in order to help finetune future iterations.

92%

of students found the AI feedback "somewhat to very helpful"

77%

said the level of feedback was "just about right"

83%

felt "somewhat to very motivated" to improve their answer

85%

said they learned from "a bit more to lots more"

Educational value and interactive

Participants appreciated the AI's ability to provide new knowledge and insights, finding it helpful in learning more about the topic at hand. They also liked the interactive nature of the AI feedback, specifically the ability to hover over sentences and textboxes to receive instant, contextual prompts.

Ease of understanding and visual aids

Participants found the AI feedback clear and easy to read. They appreciated features like colour coding and highlighting that were useful in visually distinguishing different aspects of the feedback.

Motivation and positive reinforcement

Participants found the AI feedback encouraging and that it challenged them to add more detail/improve their answers. They also liked the positive reinforcement provided by the AI feedback, appreciating that it highlighted what they did well in addition to what needed improvement.

Helpfulness and guidance

Participants appreciated the helpfulness of the AI feedback, finding it beneficial in improving their answers and guiding them on the right track. They valued the AI's ability to pinpoint areas of improvement, understanding exactly where they needed to enhance their work.

Specificity and detail

Participants appreciated how the AI feedback was personalised and targeted to their individual responses, providing specific help relevant to their answers. The detail and complexity of the feedback were also appreciated, as they found it applicable to their learning curriculum and liked how it elaborated on their answers.

"I really liked how it motivated me to improve my answer as well as tell me specifically what I needed to improve in my writing."

"I like how it expanded on my ideas so I could expand my knowledge."

"It is such an innovative idea, it is really useful, fun, exciting, and will certainly challenge me a lot more. This is a huge thumbs up, the whole idea is really cool, and I can get personalised feedback which is amazing."

"I really found the feedback good and it made me go back and really genuinely improve my answers which I wouldn't normally have done without the AI."

“I liked the complexity of it - I also felt that it was incredibly applicable to our NCEA curriculum as it asked us to elaborate on our answers and also gave us recommendations upon how to do so. I think it also provides you with incentive to improve your answers whereas the original layout didn't challenge you and there was less accountability.”

Frequently asked questions

What type of security measures have been implemented?

We have been proactive with compliance and regulatory standards and have built security into the platform from the outset.

Education Perfect adheres to government regulations, particularly regarding security and privacy.

Early decisions were made to host sensitive data within our own data centre rather than outsourcing to third-party providers.

Models are housed within the AWS ecosystem, ensuring data privacy, local hosting and alignment with ISO requirements.

We follow guidelines on the appropriate use of technology and align with the core principles as outlined in the Australian government's recent white paper on AI in education.

Where does the LLM's knowledge come from?

Our LLM draws knowledge from multiple sources including our extensive repository of lessons and course content, as well as the inherent knowledge embedded within its architecture. As with any large language model, while it might not be 100% accurate, it consistently provides valuable assistance.

When can we start using the AI features in Education Perfect?

Education Perfect's AI feedback tool is ready for customers to test drive in Term 3 of 2024. If you are interested in exploring the new AI capabilities, visit www.educationperfect.com to sign up for a free trial and be among the first to experience it.

About Education Perfect


Education Perfect is a toolkit of learning, assessment and analytics features designed to help teachers engage students, track growth and differentiate their teaching.

And like many EdTechs, Education Perfect has joined the AI conversation that's reshaping classrooms worldwide.



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