The global landscape: How AI is transforming education

Article #1 of AI in Education Article Series: January 2025

Wherever you look, New Zealand organisations are exploring Artificial Intelligence (AI). Within the educational space, most organisations are still at the beginning of their journey. However, as 2025 rolls in, a few are piloting AI tools to solve problems whose solutions have seemed dim until now.

This article is the **first in a series titled "AI tools for New Zealand's education sector"**, aimed at education providers interested in AI. The intention is for this series to act as a beginner's guide to the use of AI in education, with particular focus on AI chatbots. This series is being developed as part of our project to develop an AI chatbot for learner oral assessment (more specifically, an AI agent), funded by the Food and Fibre Centre of Vocational Excellence. We invite you to follow along as we (Scarlatti) document our learnings about this exciting space.

The article below provides a **brief overview of the global use of AI in education** – covering delivery, assessment, and pastoral care. It focuses on products or projects that undertake *distinct* roles. However, we acknowledge that there are also ones that combine roles. We plan to explore these more in our subsequent articles.

AI in delivery

There are many ways AI can be used for the benefit of learners, providers, and others in education. Researchers Mollick and Mollick (2023) outline seven roles for AI in training delivery. Language models, like ChatGPT, can be prompted to act within these roles – but they can also be incorporated into standalone products. Below we describe each role and provide examples of each.

- **AI-Simulator:** Creates role-playing scenarios for students to practice skills in context and problem-solve in real-time. Examples of AI-Simulators are the most plentiful of the seven types.

  Duolingo's 'Video Call', ELSA AI, Makes You Fluent, Cathoven, and LanguaTalk are examples within language learning. FundamentalSurgery combines AI and VR to simulate medical

procedures for students while Virti combines these technologies to simulate workplaces for students to gain 'real' life work experience.

- **AI-Tutor:** Provides instructions and subject knowledge for students to actively build their skills.

  Syntea by the International University of Applied Sciences, and Khanmigo by Khan Academy answers students' questions and guides them through learning across a range of subjects. Within maths education, Alef AI developed by Alef Education provides students with step-by-step guidance on solving equations. Poised is an AI-Powered Communication Coach that offers real-time personalised feedback on your speaking and tracks your progress.

- **AI-Mentor:** Provides personalised and frequent feedback for students throughout the learning process to build reflection and adaptation skills.

  Education Perfect's AI-powered feedback tool provides real-time feedback to students across 15 curriculums and 18 subject areas.

- **AI-Coach:** Aids with the process of reflection after a team project or test, in other words, engaging with metacognition—thinking about thinking. Examples of AI-Coach are rare.

  Swivl's Mirror helps students from early childhood to higher education reflect on their work and provides a summary of their progress to teachers.

- **AI-Student:** Helps the student by acting as the "learner", with the student becoming the teacher. This encourages the student to deeply process topics and compare different ways of thinking about a topic.

  At the time of writing this article, we could not find any examples of an AI tool that treats the learner as a teacher being utilised in education or any other sectors.

- **AI-Teammate:** Aids the student by acting as a "teammate" while building collaborative intelligence.[1] It helps students develop their social skills in a team setting and practice divvying up tasks.

  At the time of writing this article, we did not find examples of such a tool being used in education or any other sector.

Note: We do not explore Mollick and Mollick's (2023) seventh role, "AI-tool", given its overly broad nature.

AI in assessment

From 2023, there was an influx of students using AI for assignments and assessments, prompting concerns around integrity. However, since then, educators have begun to turn the tables, by thinking about how AI could be used to improve assessments.

Huysen (2024) puts forward four areas where AI could help educators with assessments. We re-imagine them here as roles:

[1] Collaborative intelligence here refers to the ability for the AI tool to help students work through a problem, instead of just providing them with the answer.

- **AI-Test constructor:** Automatically creates questions based on a set of rules and content to improve efficiency.

  QuizGecko is used by top education providers such as Stanford University, Princeton University, Yale, Berkeley, and the University of Oxford. It allows teachers to upload documents to automatically create quizzes and exams.

- **AI-Test administrator:** Monitors exams against students cheating.

  Alvy is an online AI supervision tool that not only monitors students during exams but assists them through the login and submission process.

- **AI-Grader:** Assesses students' answers and exams automatically, providing scoring and feedback.

  EssayGrader automatically grades essays through customised and default rubrics. Graide assesses students' written answers and is being used in the UK for vocational education.

- **AI-Report generator:** Automatically generates performance reports for students and teachers.

  EssayGrader generates student-specific and class-wide reports for teachers giving accurate and detailed writing feedback.

We also envision that AI could be used as a tool to recognise student's prior learning.

- SkillsAware AI asks students to provide evidence of their prior learning by requesting that they upload their resume, formal qualifications, work-related certificates, or recent performance appraisals. It also allows supervisors to log into the learner's records and validate their skills. Similarly, organisations can upload training records and confirm attendance at meetings and conferences.

AI in pastoral care

Good pastoral care is just as important as good teaching, given that a supportive environment enables better learning and development.

At the time of writing, we did not know of a framework that breaks down the uses of AI in pastoral care. However, there are a few examples of AI being used for pastoral care:

- Ada: Bolton College's chatbot acts as a digital campus assistant, helping students navigate the administrative aspects of college, such as timetables, updates at the university, and college information.
- Winston.ai: Similar to Ada, Crimson Global Academy's Winston.ai helps students with troubleshooting, and providing information about study paths and extracurriculars.
- YouSchool: YouSchool uses AI to support the transition from vocational education to the workforce by helping with CV writing, job applications, and finding job listings.

Scarlatti's take

The number of roles and examples above can almost seem overwhelming – but it certainly demonstrates the potential AI could have to address challenges in education. The most powerful products are those that combine roles to address complex issues – more examples of those to come.

Questions that we are asking for our own AI agent:

- Which of these roles are relevant to us?
- Are existing products in those roles in development, launched or mature?
- What can we learn from others and where will we need to experiment ourselves?

If you are interested in following our journey into AI, we invite you to:

- **Sign up** here to receive our next article directly to your inbox.
- **Contact** the Scarlatti team here to share your thoughts or questions.

References

Huseyn, V. (2024). AI in educational assessments: Balancing innovation with responsibility. The e-Assessment Association. https://www.e-assessment.com/news/ai-in-educational-assessments-balancing-innovation-with responsibility/#:~:text=Rather%20than%20merely%20adjusting%20the,the%20types%20of%20errors%20made.

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