

AI Use Cases for Education Publishers

Improving student learning outcomes
with digital innovation

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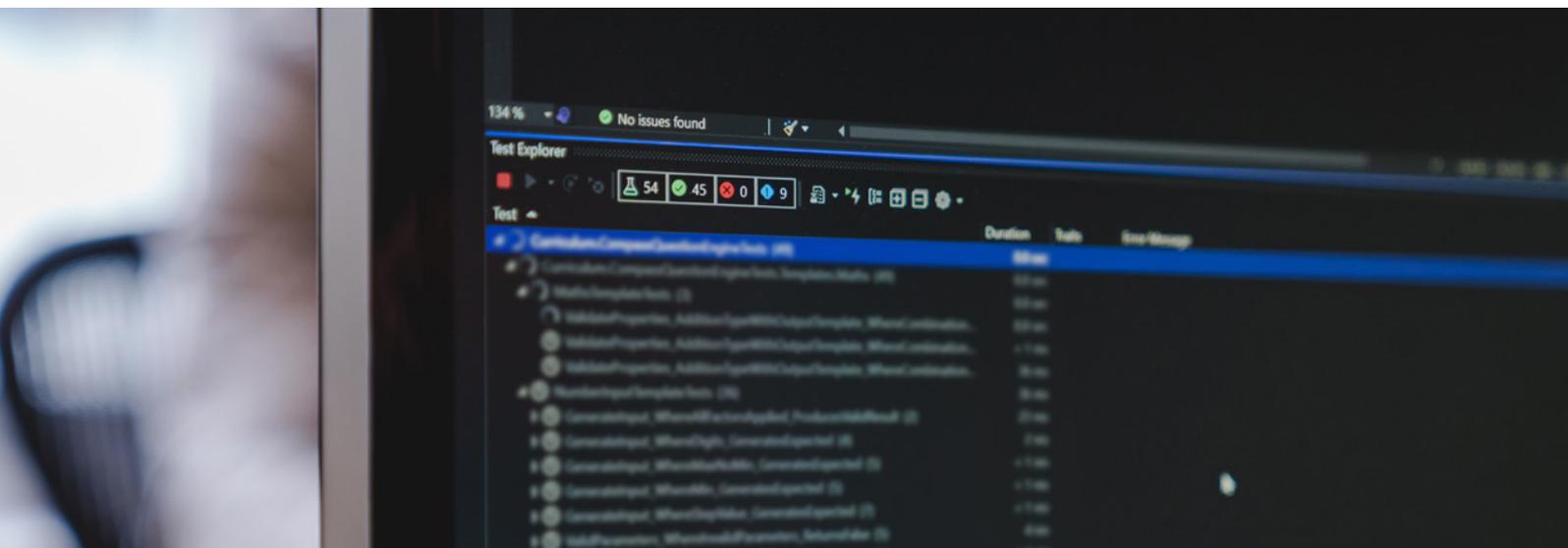
AI Use Cases for Education Publishers

Improving student learning outcomes with digital innovation

Education publishers create and store large quantities of data every day. This puts them in a uniquely good position to make use of AI models and develop more personalised learning journeys.

And thanks to the growing popularity of large language models like ChatGPT, the framing around AI skill sets has changed. It's no longer about data science and algorithms, but about understanding the potential use cases, processes, and adaptations of existing AI tools.

According to recent surveys, 75% of educators have adopted AI with the goal of improving learner outcomes. But what does 'improving learner outcomes' look like? How can you achieve this in your organisation by using AI?



In this eBook, we'll explain how AI improves the assessment creation process, what impact this has on learners, and how you can start implementing AI in your organisation.

Creating content

Content creation, proofreading, and improvement are the most time-consuming parts of the education publishing process.

AI, and specifically natural language processing (NLP), can make publishing more efficient by automating processes and reducing the pressure on human teams. AI draws upon your existing assessment content, combining it with student learning goals to generate questions in bulk.

It can simultaneously review assessment questions and pathways for spelling, grammar, and sense, and either automatically make amendments or suggest changes for you to implement. AI content creation and improvement will be especially valuable if:

- 1** You use adaptive learning logic in your assessments: AI can generate and optimise content for a range of student learning pathways.
- 2** Your curriculum is regularly changing: AI can apply updates to your whole content bank in line with new curriculum requirements or learning goals.
- 3** You need to upload a large amount of content quickly: AI can ensure all content is accurate and useful, allowing you to achieve a faster time to market.

II

SECTION 2

Analysing learner performance

Manual performance analysis processes are time-consuming and ineffective, but automated systems can miss contextual information or deliver false positives.

AI solves both of these challenges, understanding information in context to quickly deliver highly accurate analytics results. It can efficiently:

- Identify patterns and trends
- Understand why these trends are occurring
- Make suggestions for improvement
- Make predictions to assist demand forecasting
- Provide evidence of how learning has been improved

Of all AI use cases, AI analytics is expected to have the biggest impact on the education sector. 35% of organisations plan to implement it, while 38% have already embedded one or more analytics AI tools.

And with the emergence of new large language models, it's easy for someone without a background in IT to create advanced AI-generated reports. Complex data analysis is now readily available, even to non-technical experts.





SECTION 3

Content management and search

Creating and maintaining digital learning systems inevitably means working with large amounts of data every day. AI can support the content management and development process by allowing you to:

- Rapidly audit assessment content
- Locate specific pieces of information
- Cut down on time-consuming administrative tasks
- And evaluate student answers for systemic errors that could indicate an inaccurate assessment question



Uniquely, deep search can also locate information across unstructured and structured data sources on both internal and external databases.

So, if you're looking to get information on how students learn from publicly available sources, you can. Likewise, you can easily assess your own database against these learning outcomes and get a condensed, human-readable review document.

“AI-assisted content creation represents an enormous opportunity for education publishers.

By leveraging AI’s game-changing capabilities, you can supercharge authors to create 10x more content in the same amount of time. Not only that, content can also be made more effective to boost learning outcomes.”



Neil McGough,
Chief Product Officer, Learnosity

IV

SECTION 4

Personalisation and adaptive learning

Adaptive learning lets you provide students with questions that are personalised to their age, previous answers, engagement levels, and more. That means there's a vast number of potential learning pathways a student could follow.

With generative AI and machine learning (ML), you can create content for your adaptive learning engine and automate the analysis process. This will enhance results across the learning cycle, helping to:

- Keep students engaged with smart content that varies in format, complexity, and topic. AI can automatically interpret which learning pathway to follow for the best results.
- Deliver interventions when required to provide students with additional information or context.
- Adapt according to results: AI can identify knowledge gaps, and, if there are any systemic issues in the assessments, adapt accordingly.

Using AI to create content and analyse user performance feeds into optimised adaptive learning and, in turn, better student outcomes.





SECTION 5

Enhanced accessibility

Digital learning platforms are, in themselves, accessible to a wider range of learners than typical paper-based assessments.

By adopting AI, you can add numerous accessibility features to your platform that would have previously been too costly, time-consuming, or complex to implement. This could include:

- AI audio prompts: Auto-translates written text (including numbers and symbols) into audio prompts to support students with learning difficulties or visibility issues. Likewise, AI can use speech recognition to transcribe spoken answers.
- Diverse question delivery: AI can also help you deliver questions in a way that represents a range of people and cultures, improving inclusivity.
- Real-time translation: to facilitate learning for students who might not speak English as their first language.

Remember, the accessibility features you choose to add will depend on what your data calls out as important to your digital learning platform. Make sure the data you are collecting is relevant and stored securely, and be open to recognising potential biases or quality issues.

How to implement AI safely

If AI is not implemented correctly, it could impact data security and privacy across your educational institution, negatively affecting stakeholders, students, and teachers. Here's what to keep in mind when adopting AI in your organisation for the first time:

Governance

AI requires human governance, management, and oversight. Before you proceed with implementing AI, make sure you have the people and processes in place to manage it.

This starts with having a short, medium, and long-term plan for what you intend to achieve, as well as a clear set of goals to work towards. Use the use cases listed above to decide where AI will be most valuable to you, and whether you want to adopt it across sections or the whole of your organisation.

Once you have defined your goals, you can start preparing for AI implementation. Your AI governance team can be made up of internal or external staff members, whose priority is to:

- Document your organisation's AI model(s) development
- Regularly run QA checks on AI-based content
- Identify areas that could be improved with AI

Test fraud, algorithmic bias, and privacy concerns are just a few of the known challenges posed by AI, but more pitfalls are sure to present themselves as the technology evolves—so it's the duty of edtech businesses to handle AI with care. Safety measures, such as using human reviewers, need to be put in place to make sure that AI is implemented responsibly.



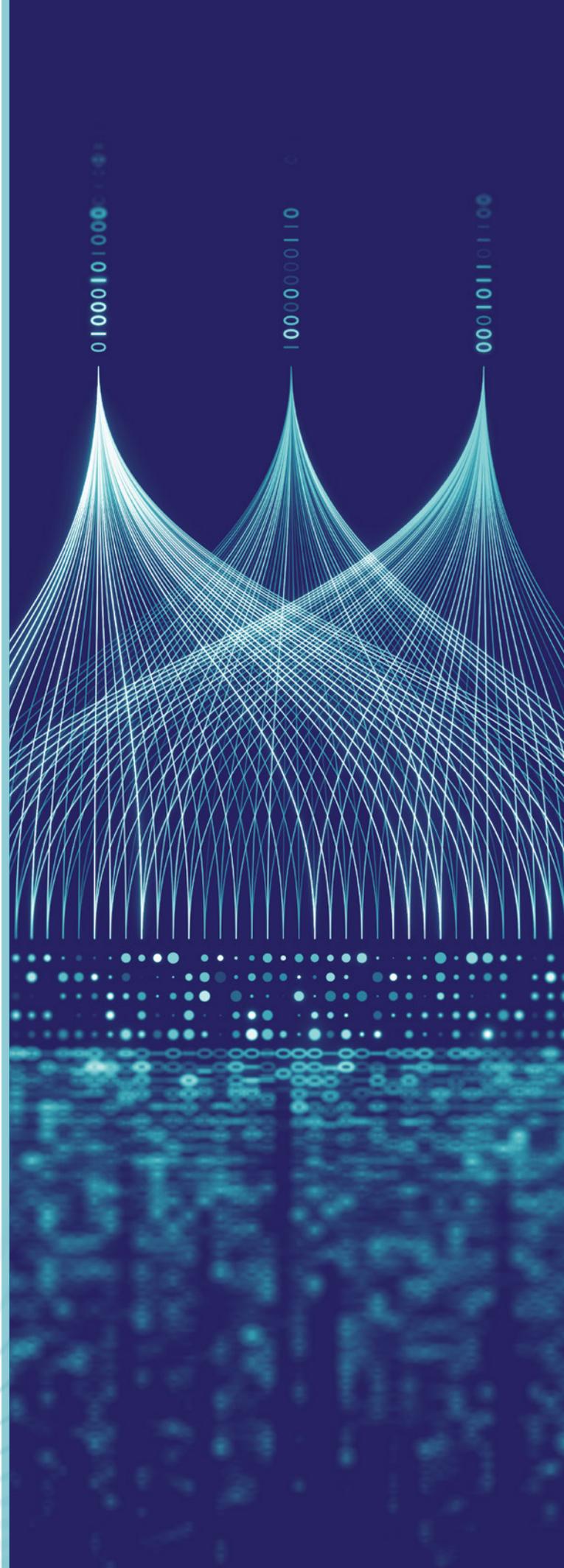
Neil McGough,
Chief Product Officer, Learnosity

Security

It is not recommended to use public AI platforms for business purposes; not only does this put your data at risk, but it could also lead to complications due to intellectual property ownership restrictions in software development.

OpenAI, for example, does not yet have clear policies on how data is used on its platform and whether security measures can be added. We would suggest using a secure, gated tool like Azure OpenAI, which:

- Encrypts prompts and completion data, storing them for only 30 days in the same region.
- Provides guarantees that your data remains private and is not used to train AI models.
- Offers all of the key security measures of Microsoft Azure.





Data privacy and ownership

AI needs to be able to access and review your current data in order to produce relevant results. Here are some of our top suggestions for secure data privacy and ownership:

- If a third party or SaaS provider currently has legal control of your data, it may be worth developing a custom cloud-native application that allows you to use your data freely.
- If IP issues are a concern for you, you may want to consider 'data grounding'. This involves instructing your AI systems to only find answers in the data or text content you give them, ensuring that AI is only used within a limited, controlled context.
- If you have large volumes of unstructured data, the 'data lake' approach might be right for you. This involves pooling data into a secure long-term storage solution for AI analysis.

Getting started with artificial intelligence in education publishing

We understand cloud computing inside and out and believe all ambitious, growth-minded businesses deserve that kind of expertise. More than anything, we know that being told about a problem and developing then applying a short-term solution is not enough to facilitate growth. We set out to be partners in every sense of the word by fully integrating ourselves within your business so that each and every solution we provide is personalised, sophisticated, and well-informed.

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