Microsoft

Empowering Every Learner and Leader

Real-world use cases for AI in K–12 education



What you'll find in this white paper

03

Executive summary

AI-enabled learning, future-ready students

04

Introduction

AI transformation: A strategic imperative

05

Use case

Personalise learning to foster autonomy and agency

07

Use case

Prepare students for future success

09

Use case

Transform daily workflows so educators can focus on what matters most

11

Use case

Uncover institutional insights to drive new approaches to operations

13

Use case

Simplify operational and security complexity

15

Conclusion

The power of possible: Microsoft's vision for AI in education

Executive summary

AI-enabled learning, future-ready students

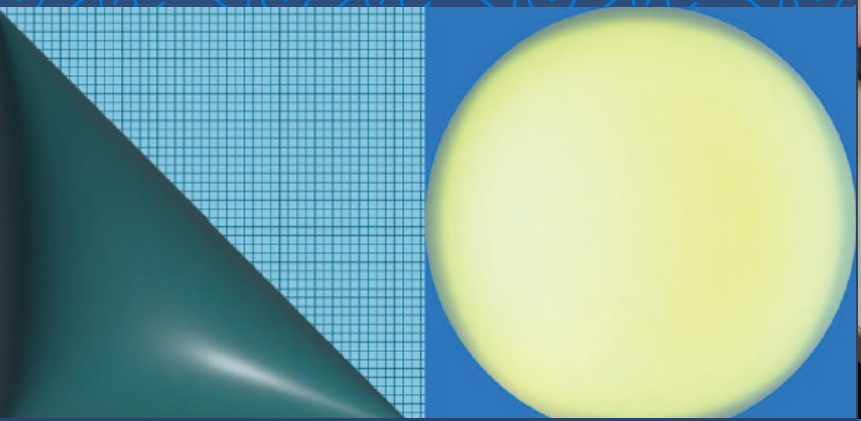
Schools are navigating rapid changes: rising student needs, staffing pressures, cybersecurity risks and growing expectations for personalised learning and operational efficiency. AI offers practical ways to meet these challenges while strengthening the human relationships at the heart of education.

We're here to help.

This white paper highlights five areas where AI is already improving teaching, learning, operations and security in K–12 education. Each use case demonstrates the ways that these tools can support educators, extend student learning, streamline complex workflows and give leaders clearer insights to help them approach transformation.

As you explore practical applications and real-world examples, you'll see how schools are adopting AI safely and pragmatically while grounding their work in security, privacy and trust to advance their goals and create stronger, more effective learning environments.





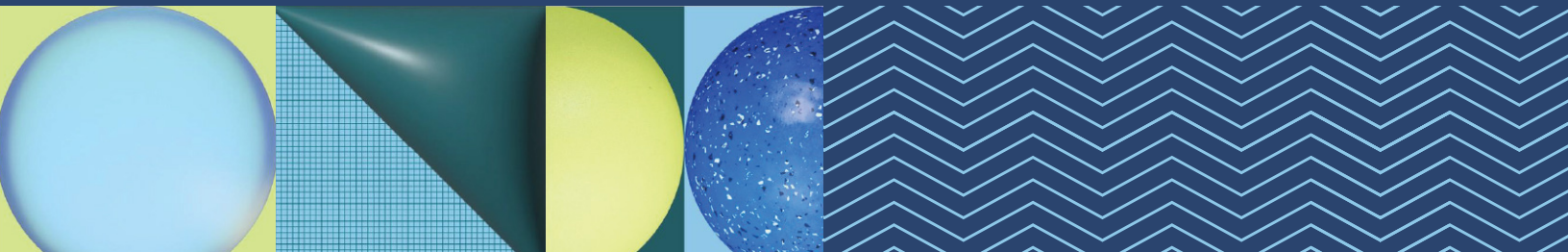
Introduction

AI transformation: A strategic imperative

By embracing AI, you can prepare students for a world where both the speed and scope of change are rapidly increasing. To help you unlock this technology's potential safely and responsibly, we've identified five use cases where AI is already transforming the experience for students, teachers, leaders and staff.

- **Personalise learning to foster student autonomy and agency**
  Personalise learning at scale to offer more timely, tailored support to every student and deepen impact without expanding workloads.
- **Prepare students for future success**
  Equip students to be active and critical digital citizens by instilling the AI literacy and future-ready skills they'll need to thrive in work, life and learning.
- **Transform daily workflows so educators can focus on what matters most**
  Empower educators with AI that lightens their administrative burden, supports differentiation and reclaims time for connection, creativity and student engagement.
- **Uncover institutional insights to drive new approaches to operations**
  Support smarter, more holistic decision-making by turning disconnected data into clear, actionable insights that help leaders reduce everyday pressures for staff while reimagining how schools operate.
- **Simplify operational and security complexity**
  Safeguard teaching and learning at scale by giving teams intelligent tools that streamline routine tasks and strengthen protection while creating trusted environments where educators can explore with confidence.

Institutions that enact this vision unlock modern approaches to teaching, learning and supporting education. As you progress through these use cases for AI in education, you'll see examples of what's possible and gain valuable perspective that can help you craft your vision for AI transformation.



Use case

Personalise learning to foster autonomy and agency

The reality for students

Approaches that tailor instruction, pace and learning pathways to each student's needs, strengths, interests and goals foster deeper understanding and close achievement gaps, but they're difficult to scale. AI helps teachers extend flexibility and choice to support personalisation through human-centred learning.

Reimagine the student experience with AI

Application	Outcomes
Learning experiences that adapt to each student's curiosity and goals.	Deeper understanding, more critical thinking and greater confidence.
Always-available, multilingual AI guides.	More equitable access to support, extension and exploration.
Real-time, continuous coaching and feedback at scale.	Boosted metacognition through more sustained reflection, iteration and growth.
Tools that strengthen student agency, voice and self-advocacy.	Greater agency over how learners approach challenges and demonstrate understanding.
Opportunities for students to develop responsible, ethical AI literacy.	Building capacity to evaluate information, make thoughtful decisions and engage as empowered digital citizens.
Creative, collaborative environments where AI helps students explore ideas, problem solve and innovate.	Preparation for future academic and real-world contexts.

Real-world inspiration

Maryvit School

Maryvit School wanted to balance lesson planning, administrative tasks and student engagement. PowerBuddy, an AI assistant powered by Microsoft Azure OpenAI in Foundry Models, is boosting efficiency through generating lesson plans, personalising learning activities and keeping students focused by gently redirecting them back to tasks.

In a survey of Maryvit teachers, 98% of felt PowerBuddy saved time in lesson creation, and 50% reported saving 20 minutes or more per lesson or assessment. The tool is helping reduce educator workloads, strengthen student independence and future-ready skills and foster inclusive learning environments.

> “This is not just about using technology. It’s about preparing our students and teachers for the future with tools that are secure, trusted and effective.”
>
> Dr. Steven Kitikiatisak,
>
> President, Maryvit School

Read the full story



Use case

Prepare students for future success

The reality of future readiness

Knowing how to prepare students for every outcome isn't easy. But one thing looks certain: AI will be a part of their daily lives. Teachers are thinking about the dispositions, preferences and transversal skills young people will need in the future. For schools, that means supporting digital citizenship and critical thinking.

Reimagine skill development with AI

Application	Outcomes
Integrating AI literacy into the curriculum with a focus on understanding, evaluating and responsible use.	Building the foundation for responsible decision-making, digital citizenship and future academic and career pathways.
Access to AI-powered platforms for career-readiness and real-world experience.	Cross-industry skill-building, including problem-solving, collaboration, coding, creativity and analytical thinking.
Immersive, experiential learning environments where AI helps students explore complex concepts, simulate real-world scenarios and design project-based learning concepts for group work.	Developing project management skills while building confidence through authentic, student-driven learning experiences.

[1]LinkedIn, AI and the Global Economy: Unlocking Growth and Reshaping Work, 2025

Real-world inspiration

Fulton County Schools

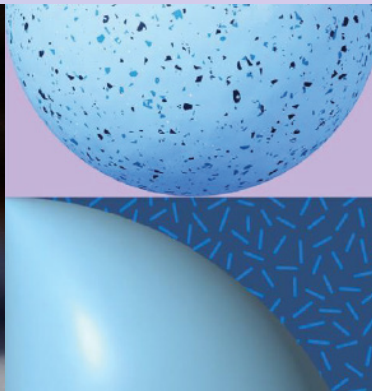
Fulton County Schools adopted Microsoft 365 Copilot Chat to enhance student learning and promote responsible, effective AI usage and future career readiness. Through an AI assistant, the school system is empowering students to explore new ideas, build confidence and tackle real-world problems.

Learners use Copilot Chat for conducting research, creating multimedia projects, coding challenges, 3D modelling, design ideation, time management and academic planning. With the support of AI, they've undertaken ambitious projects like podcasts on historical events, connecting an accelerometer to a front-end user interface and designing a smart mobility cane with IoT capabilities.

> We use Copilot Chat as a brainstorming partner to ideate, but not to actually do our work for us. It helps us collaborate and expand our creativity to think of more ambitious ideas.
>
> Pragya Modgil,
>
> Junior, Johns Creek High School

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Use case

Transform daily workflows so educators can focus on what matters most

The reality for educators

According to UNESCO, administrative tasks are the leading source of stress for teachers in OECD countries.[1] Meanwhile, personalised instruction is both crucial and challenging to scale. Under these conditions, 62% of educators experience frequent job-related stress.[2] Teachers need to feel that they have the tools, skills and support to make a difference.

Reimagine instruction with AI

Application	Outcomes
Enhanced lesson planning and materials.	More time for creativity, connection and instructional design.
Simplified summaries, parent communication and report drafting using AI.	Lighter administrative loads, supporting clear, timely engagement with families.
Classroom-level personalisation that helps teachers tailor activities and pathways to students' interests, strengths and needs.	Greater student agency and deeper learning.
Translation, accessibility and inclusion tools.	Active participation regardless of language or ability.

[1] UNESCO, Global report on teachers: addressing teacher shortages and transforming the profession, 2024.
[2] Rand, Teacher Well-Being, Pay and Intentions to Leave in 2025, June 2025.

Real-world inspiration

Education Authority of Northern Ireland (EANI)

EANI faced the challenges of varying student abilities requiring tailored educational approaches, limited resources in rural schools, administrative burdens on teachers and rising complexity in special education needs. The school system introduced Microsoft 365 Copilot to reduce admin work and free teachers to focus on students.

Copilot's ability to synthesise information about students' preferences helps teachers inform lesson planning, making learning more engaging and customised rather than a one-size-fits-all model. In one instance, students chose options based on their likes and interests. Educators then used Copilot to create a prompt reflecting these preferences, enabling students to create their own artwork with minimal assistance.

> "The very fact that the young person has been the architect of their own work based on their likes, dislikes and choices, the pride that they show – the ownership of that – has raised their self-esteem."
>
> Brenda Mullan,
>
> Vice Principal, EANI

Read the full story

Use case

Uncover institutional insights to drive new approaches to operations

The reality of operations in education

Getting the most value out of institutional data is both a skilling and a technology challenge. Analysis requires extensive manual effort and high data literacy, so staff's capacity to sift through information is limited. On the technology side, disconnected systems, siloed data and a lack of insights make decision-making more difficult. On top of these challenges, legacy administrative processes devour time and drain budgets.

Reimagine analytics and operations with AI

Application	Outcomes
Improved workflows across HR, finance and operations.	Reduced manual effort, transformed routine processes and more time for staff to focus on higher-value work and student-facing initiatives.
Predictive insights into student outcomes.	Earlier identification of emerging needs, tailored support and proactive decision-making grounded in real-time data.
Unified data environments that break down silos.	Improved governance and clearer, more connected views of performance and priorities for all teams.
Instant summaries of complex documents to help staff quickly understand policies, reports and plans.	Greater organisational alignment, informational availability and responsiveness across departments.

Real-world inspiration

Coquitlam School District

The district faced challenges with data compliance and privacy, especially with unstructured data from teachers. Adopting a platform infused with AI is helping them make the most of their data while keeping it safe.

By integrating their tools into a unified system, the district ensures seamless data flow and real-time operations across all schools. From there, they can use AI assistance to turn unstructured data into actionable insights and make more informed, real-time decisions. The result is faster, more effective responses to student needs.

> Intelligent, AI-supported tools like Copilot will give us the ability to gain insights that will change the educational world."
>
> Stephen Whiffin,
>
> Assistant Superintendent and CIO, Coquitlam School District

Read the full story



Use case

Simplify operational and security complexity

The reality of IT security

Education institutions are the third-most targeted industry by cyberthreat activity.[3] That means more and greater challenges for the security staff who keep schools safe. In the age of AI, safety and privacy are paramount, so intelligent security options are critical for keeping ahead of threats.

Reimagine security with AI

Application	Outcomes
AI-powered threat detection that continuously monitors for unusual activity, emerging vulnerabilities and cyberattacks.	More proactive threat responses in spite of limited security staff at schools.
Automated incident response to quickly triage issues, isolate affected systems and restore secure learning environments.	Accelerated containment and reduced disruption for IT teams.
Safeguards for sensitive information through regulatory alignment with standards like FERPA and COPPA.	Reinforcing data privacy and compliance enforcement, with greater transparency and confidence for leaders around data access, storage and sharing.
Responsible AI guardrails, helping tools remain safe, age appropriate and aligned to district policies.	More robust protection for students while enabling innovation in classrooms and operations.

[3] Microsoft, Cyber Signals Issue 8 | Education under siege: How cybercriminals target our schools, October 2024

Real-world inspiration

South Australia Department for Education

The South Australia Department for Education aimed to harness AI's potential while addressing safety concerns. In partnership with Microsoft, the school system launched EdChat, an educational chatbot powered by AI, and implemented Microsoft Azure AI Content Safety.

EdChat is boosting student research, topic exploration, creativity and project refinement. Meanwhile, built-in features employ advanced models to identify and mitigate harmful or risky content. The chatbot blocks inappropriate queries and filters harmful responses, allowing teachers to focus more on educational benefits than content oversight.

> We're shaping an entirely new way of learning, so we need to understand how we can maximise the potential value of generative AI while minimising the risks."
>
> Martin Westwell,
>
> Chief Executive, South Australia Department for Education

Read the full story



Conclusion

The power of possible: Microsoft's vision for AI in education

From personalised learning to future-readiness, from empowered educators to informed leaders, from back-office processes to the front line of cybersecurity, our vision for AI is rooted in the belief that technology should expand human potential and strengthen every part of the educational experience.

It centres on three principles:

- AI solutions designed for education and grounded in security, trust and privacy.
- Empowering every learner and professional to achieve more through AI-enhanced teaching, learning and operations.
- Inspiring institutions to imagine new models of learning and leading, deeper engagement and more innovative, adaptive organisational practices.



Conclusion

Your partner in AI transformation

As you navigate your AI transformation, Microsoft is ready to support your journey through trusted tools and proven expertise. Wherever you are in your AI journey, there's are tools you can use to capture the potential you've explored throughout the five use cases in this white paper.

- Microsoft 365 includes Microsoft 365 Copilot Chat and new teaching and learning capabilities to bring the power of AI into your everyday education apps.
- Microsoft Security Copilot summarises data signals into insights, detects cyberthreats and reinforces your security posture.
- Copilot Studio is an end-to-end conversational design studio to extend and customise AI solutions.
- Microsoft Foundry gives you the power to build, test and deploy AI solutions at scale using tools like Azure OpenAI in Foundry Models, which enables custom AI assistants that run on your data using the latest models from Azure OpenAI.

As your technology partner, Microsoft can help you navigate complex modernisation, responsible AI adoption and large-scale transformation. Partner with us today to put innovative tools and proven support into motion so you can reimagine what's possible for students, educators and institutions.

Start your AI transformation journey today

Explore Microsoft tools that unlock innovative teaching and learning experiences while securing and streamlining the processes that make education possible.

Bring opportunity to life with AI.

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