

AI in Education

Artificial Intelligence in education has the potential to enhance learning, personalise teaching and streamline administrative tasks. These benefits require both human capacity and technical infrastructure to implement.

At Cambridge, we recognise the importance of a thoughtful, strategic approach to adopting new technologies. Our expertise and tailored support services – from readiness assessments and tool evaluations to comprehensive training programmes – ensure that schools are well equipped to harness the benefits of AI, while also addressing key issues such as policy compliance, data privacy, and infrastructure needs.



AI in Education

In the educational context, AI is underpinned by several key technologies:



Machine Learning systems

analyse vast amounts of data to identify trends and make predictions, such as forecasting learner performance.



Natural Language Processing tools

enable computers to understand and generate human language, making them useful for virtual tutoring or automated feedback.



Computer Vision technologies

interpret visual information, which can be employed in interactive simulations and digital labs.



Generative AI models

can create original content – from customised learning materials to creative problem-solving activities.

Applications in the Classroom

Opportunities

AI offers many opportunities to transform teaching and learning – while complementing traditional teaching – by making education more personalised, engaging and efficient. For example:

- Learning experiences can be tailored to individual needs, such as through AI tutoring. These platforms analyse learner performance data to customise support and resources, ensuring that each learner is appropriately challenged. This personalisation boosts confidence and deepens understanding by promptly addressing gaps in knowledge.
- AI can reduce the administrative burden on educators by automating routine tasks such as lesson planning, grading, tracking progress and organising data. This frees educators to focus on creative, high-impact teaching methods and deliver a more responsive, data-informed learning experience.

Challenges

Despite its promising benefits, integrating AI into education has challenges and misconceptions that must be addressed.

A concern is that AI may eventually replace educators. However, AI is intended to handle repetitive tasks and provide insights, allowing educators to focus on mentoring, critical thinking and creative instruction – areas in which human judgement is indispensable.

Another critical challenge is ensuring robust data privacy and security. AI systems often require access to sensitive learner information, raising valid concerns about compliance with data protection regulations. Schools must implement stringent safeguards and transparent policies to protect this data while fostering trust among educators, learners and parents.

If AI systems are trained on biased or unrepresentative data, they risk perpetuating inequities in the classroom. It is essential to monitor these systems to ensure fair and objective outputs.

Many educators may feel apprehensive about using AI due to limited technical expertise and concerns over the required infrastructure. Addressing these issues through comprehensive training and gradual integration strategies is key to overcoming resistance and ensuring that AI is used effectively and responsibly in educational settings.



What to Be Aware of

Policy Frameworks and Governance

Successful integration of AI into education necessitates robust policy frameworks and clear governance structures. Globally, organisations such as UNESCO, the EU, OECD and UNICEF have established guidelines that emphasise transparency, accountability and protection of individual rights. These frameworks serve as benchmarks for ethical AI adoption, ensuring that AI tools are implemented with respect for the rights and welfare of all stakeholders, particularly children.

Data Privacy and Security

Schools must adhere to established data protection regulations and implement best practices for data management, ensuring that information is stored securely and used appropriately. Transparent communication when collecting, processing and protecting data is vital to build trust with all stakeholders. By instituting regular audits and strict cybersecurity protocols, educational institutions can safeguard against unauthorised access and data breaches while supporting the responsible use of AI.

Infrastructure and Capacity Building

Realising the full potential of AI in education depends on technical infrastructure and the human capacity to use it. Many schools may need to upgrade existing digital resources to accommodate the demands of AI tools. This includes investing in reliable internet connectivity, modern hardware and secure software platforms. Equally important is the continuous professional development of educators and administrators. Comprehensive training programmes and AI literacy initiatives empower educators to confidently integrate these technologies into their teaching practices. Together, a strong technical foundation and ongoing capacity building are essential to ensuring that AI implementation not only enhances learning outcomes but is also sustainable in the long term.

How Cambridge Can Support

AI System Readiness Assessment

At Cambridge, we believe that effective AI integration begins with a clear understanding of your current capabilities. Our AI System Readiness Assessment provides a detailed evaluation of your existing digital infrastructure, and staff expertise. By identifying strengths and areas for development, we help ensure that your foundation is robust enough to support the successful adoption and sustainable use of AI in your schools.

We comprehensively evaluate available AI solutions, assessing their usability, accessibility and alignment with ethical and educational standards.

Assessment of AI Tools for Use in Schools

Choosing the right AI tools is crucial for meeting the diverse needs of educators and learners. We comprehensively evaluate available AI solutions, assessing their usability, accessibility and alignment with ethical standards. Our review process compares tools against international benchmarks and best practices, ensuring that any technology introduced into the classroom enhances learning and adheres to strict data protection and quality requirements.

Impact Assessment

Before committing to full-scale implementation, pilot projects are essential to understand the real-world impact of AI applications. We support schools by designing and overseeing pilot initiatives that test AI tools in practical settings. Our impact assessments involve collecting detailed feedback from administrators, learners, and educators along with quantitative and qualitative analysis of educational outcomes. This evidence-based approach ensures that any wider rollout is informed by solid data and refined through initial trials.

Capacity Building for Educators and Administrators

Empowering educators is at the heart of successful technology integration. We offer customised capacity-building programmes on AI fundamentals, data literacy and practical strategies for integrating AI into everyday teaching. Professional development opportunities are designed to equip educators and administrators with the confidence and skills needed to utilise AI tools effectively, fostering an environment where technology enhances rather than overshadows the core pedagogical mission.

AI Literacy Training and Teaching with AI in STEM

A clear understanding of AI is vital for both educators and learners. Our AI literacy training demystifies complex technologies by focusing on effective prompt crafting and the critical evaluation of AI outputs, and ethical considerations. Additionally, we offer specialised programmes for teaching with AI in STEM subjects. These initiatives include practical demonstrations and strategies that prepare learners for a future where technology and innovation are linked to academic success.

AI and Assessment

AI fundamentals are essential for modern assessment professionals, to ensure that they can harness AI effectively. Rather than replacing human expertise, we position AI as a tool that enhances the quality of assessment by enabling the creation of standardised, curriculum-aligned questions across various levels of Bloom's taxonomy. Through practical demonstrations and clear, evidence-based strategies, educators will gain the skills to integrate AI into their workflows responsibly and efficiently.

Together, these services form an extensive support framework designed to guide schools through every stage of AI integration, ensuring that the journey is both responsible and effective.



Next Steps

AI holds transformative potential for education – enhancing personalised learning, boosting engagement and streamlining administrative tasks. However, the successful integration of AI requires careful planning, robust policies and a solid infrastructure paired with comprehensive capacity building.

We invite you to take the next step: engage Cambridge in your projects, explore our training programmes and work with us to unlock the full benefits of AI in your school. Let us partner with you to shape a future where technology and teaching work hand-in-hand to enhance learning outcomes across South Africa.



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