



Navigating opportunities for AI in education.

Explore how Adobe empowers students to succeed in the age of AI.



Contents

Artificial intelligence is transforming education.

Introduction.

Balance caution and innovation: the imperative for universities to embrace AI.

Create more time for human connection and authentic assessment.

Empower teaching with AI while maintaining ethical integrity.

Foster digital fluency with Adobe Express, Adobe Acrobat, and generative AI.

A trusted solution.

Fostering creativity and building digital skills.

Creating efficiently with generative AI.

Creativity made easier and more accessible.

Learning and communication made more effective with generative AI.

Navigating the AI landscape together.

Centering educators in the age of AI.

AI resources for teachers.

Learn from the community.

Additional resources.

Artificial intelligence is transforming education.

AI tools keep changing the education landscape, giving leaders and faculty opportunities to make positive changes throughout the system.

Engaging with the fast-paced world of technology can be both exhilarating and daunting for universities. AI tools are writing essays and solving science and math problems, and universities are witnessing their transformative power firsthand. The current consensus is that knowledge workers won't necessarily be replaced by AI, but these workers will be replaced by those who understand how to use tools like AI to create, produce, and shape ideas ethically*. Addressing AI in education is therefore crucial for realizing key opportunities, mitigating risks, and managing unintended consequences.

This brief aims to provide a starting point for conversations around the possibilities of AI in education, leveraging the current discussions and highlighting the importance of nurturing digital fluency through pedagogical innovation. The brief also showcases two AI-powered apps—Adobe Express for creativity and Adobe Acrobat for productivity.

Adobe Express is an all-in-one platform for efficient and collaborative content creation that includes easy-to-use generative AI features powered by Adobe Firefly. As both a web app and an AI engine within other Adobe apps, Firefly delivers tailored generative AI features that are designed to meet creative needs, use cases, and workflows across any subject.

Adobe Acrobat enables students to create, edit, annotate, share, and e-sign PDF documents. And now universities can choose to add the Adobe AI Assistant for Acrobat so students can ask their documents questions and get one-click summaries to help them work faster and smarter.



* Sidney Fels, Kyoungwon Seo, Joice Tang, Ido Roll, and Dongwook Yoon: "The impact of artificial intelligence on learner-instructor interaction in online learning," October 26, 2021.

Balancing caution and innovation: the imperative for universities to embrace AI.

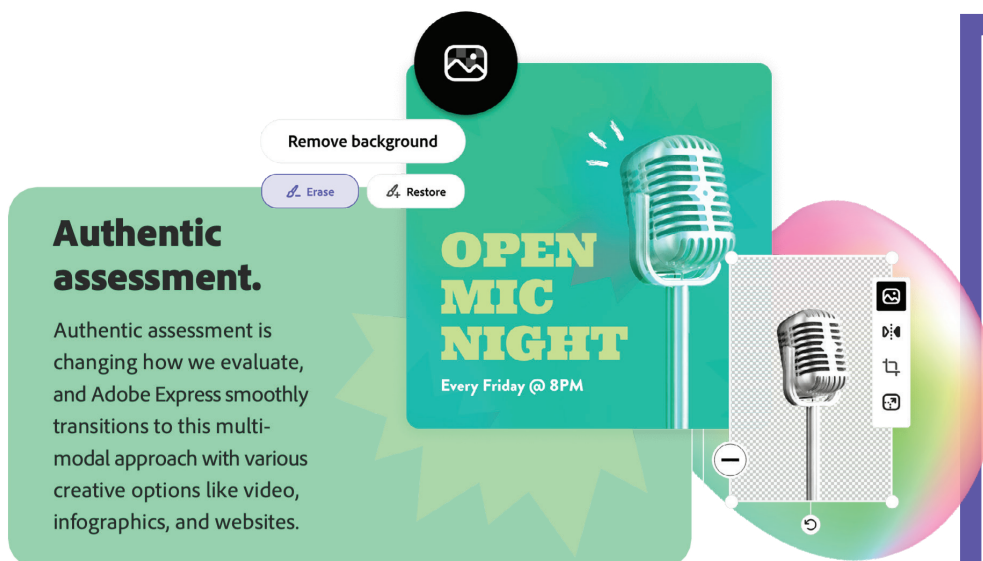
Since the 1980s, research on AI in education has focused on using AI to improve learning. Organizations like the International AI in Education Society were formed in the 1990s to advance this work. Most research has looked at AI that supports learners by aiming to automate teaching tasks and free up time for educators to connect with, empathize with, and mentor individual students. Learner-supporting AI is gaining popularity in mainstream education and other fields like legal, science, dentistry, medical, and engineering education*.

Create more time for human connection and authentic assessment.

Human connection is irreplaceable in any learning process. The role of the educator extends beyond the transmission of knowledge; it involves fostering curiosity, critical thinking, and emotional wellbeing. As such, educators need to strike a balance between technology and human interaction. It's essential to involve college faculty in the integration of AI tools, ensuring that these technologies align with their needs and empower them to create engaging and inclusive learning environments.

A helpful concept is "authentic assessment," which proposes a forward-thinking and future-facing approach to the integration of AI technologies across the curriculum. The term is sometimes also called "experiential learning," "active learning," or "project-based learning"—and what these approaches have in common is the principle that students learn best when they're asked to produce and share their own ideas rather than merely consume other people's content.

Adobe apps enable authentic assessments for every student everywhere along the learning curve, from novice to expert. Authentic ways to assess students include asking them to create a video, a podcast, an infographic, a website, or an interactive PDF to communicate their knowledge. And because apps like Adobe Express and Acrobat integrate with one another and offer seamless ways to create, review, and collaborate on digital projects, they help educators and students make the most of authentic assessments.



Educators have been discussing the need to change the way they assess students for a long time, but the advent of AI in higher education will ideally accelerate authentic assessment as a best practice.

* Wayne Holmes, Jen Persson, Irene-Angelica Chounta, Barbara Wasson, and Vania Dimitrova: "ARTIFICIAL INTELLIGENCE AND EDUCATION," Council of Europe, November 30, 2022.

Empower teaching with AI while maintaining ethical integrity.

Foster digital fluency with Adobe Express, Acrobat, and generative AI.

To introduce digital learning methods and encourage students to express themselves with multimedia tools, an all-in-one app like Adobe Express can be a great starting point. It easily fits into the technologies and platforms universities already use. With Adobe Express, students get access to a vast library of content from Adobe Stock, including images, videos, music tracks, and motion graphics templates to enhance their projects. Plus, it offers features powered by Firefly generative AI. The Adobe Education team has compiled guides and tutorials to help users safely navigate Firefly generative AI in Adobe Express, available at edex.adobe.com/ai.

In addition, students can use Acrobat to enhance their learning. The AI Assistant helps them summarize, synthesize, and understand large quantities of information in PDFs and other documents. For example, they can generate quick overviews of industry reports and research materials to digest the content faster. They can ask their documents questions to quickly find answers when studying, and they can summarize reading material to create study guides.

While it's essential to acknowledge the challenges and ethical considerations surrounding AI, it's equally crucial to explore the myriad advantages it offers in enhancing student learning experiences.



To prepare students for the digital world they'll enter upon graduation, universities should embrace the latest advancements, equipping students with the necessary skills and fostering their creativity.

A trusted solution.

Adobe has implemented Content Credentials through the Content Authenticity Initiative (CAI)*, enabling students to attach information to their content such as their name, creation dates, and tools used. This verifiable, tamper-evident information makes it easy to track both AI-generated and human-created content so that everyone can understand a digital asset's origin and history, verify its integrity, and help create a sense of transparency and trust. The CAI collaborates with over 900 members to make this solution accessible for all.

Adobe has taken a thoughtful approach to developing generative AI. The Firefly features in Adobe Express are trained on Adobe Stock images, openly licensed content, and public domain content, and they're designed to be safe for commercial use. Both Firefly and Acrobat generative AI features have been developed following Adobe's AI ethics principles of accountability, responsibility, and transparency.

By giving students generative AI tools that balance innovation and ethics, educators can teach them to be both skilled and responsible media creators in school and in the workforce.



Text to Image

Students can generate images that match their visions by typing detailed prompts.



Generative Fill

Students can easily insert, remove, or replace content in images using text prompts.



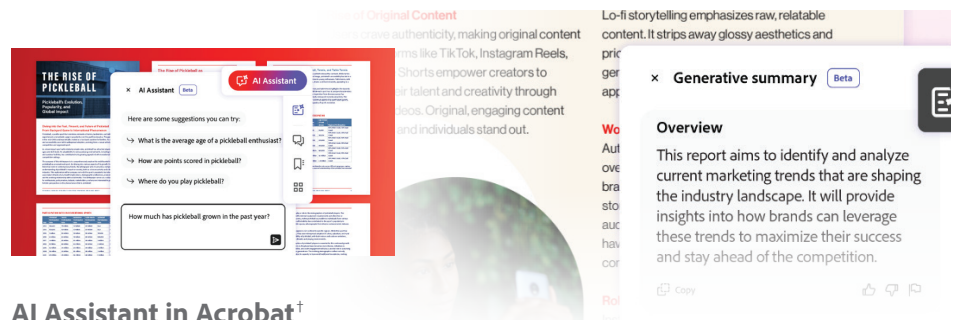
Text Effects

Students can easily embellish basic text with expressive graphics by typing descriptions of styles, themes, or textures.



Text to Template

Students can generate extraordinary, fully editable templates using simple text descriptions.



AI Assistant in Acrobat[†]

Students can interact with their documents to ask questions and generate summaries with one click.

AI Assistant

* CAI is a group of creators, technologists, journalists, and activists leading the global effort to address digital misinformation and content authenticity.

[†] Additional purchase may be required.

Fostering creativity and building digital skills.

Creating efficiently with generative AI.

With Adobe Express generative AI features, students in any discipline can quickly articulate their ideas and showcase their knowledge.

Creativity made easier and more accessible.

Adobe's generative AI technologies can help students initiate the creative process with inspirational starting points that reduce the anxiety of staring at a blank page. When they have an easier time creating images, graphics, videos, and websites, students build their holistic communication skills as they explore new ways to share their thinking. All the while, they build critical analysis skills as they reflect on their choices and processes, especially when integrating data, evidence, and research into their work.

Learning and communication made more effective with generative AI.

Students can use the AI Assistant in Acrobat to learn faster and grow their confidence. By engaging directly with their documents, they can drill down to get the information they need for research papers and presentations. And they can use the responses and summaries to clarify complex concepts, study more effectively, and build expertise at their own pace.

Navigating the AI landscape together.

Given that more than 47% of learning management tools* will be powered by AI in the next three years, it's clear that we need to talk about AI. By carefully evaluating its advantages and potential challenges, we can harness its power to unlock the full potential of universities, fostering a generation of lifelong learners who are prepared for the demands of our digital-first world.

Centering educators in the age of AI.

To succeed in leveraging AI as an enhancement to learning and teaching, many argue for "Always Centering Educators (ACE) in AI." This approach emphasizes keeping a humanistic view of teaching at the forefront.

This concept is built around three keys:

- Making moment-to-moment decisions
- Participating in decisions about the design and evaluation of AI-enabled technologies
- Preparing, planning, and reflecting on teaching

The goal is not just to make faculty jobs easier but also to empower faculty to understand their students deeply and respond creatively to teachable moments[†].

AI supports the democratization of creativity, inspiring students to engage more deeply and develop essential skills for future success.

* Nikita Verma, "How Effective is AI in Education? 10 Case Studies and Examples," February 8, 2023.

† Miguel A. Cardona, Roberto J. Rodríguez, and Kristina Ishmael: "Artificial Intelligence and the Future of Teaching and Learning," May 2023.

AI resources for teachers.

Learn from the community.

There are countless resources for educators who want to quickly level up on AI. The [Adobe Education Exchange](#) has an extensive, free collection of generative AI teaching resources. There's also the [International Society for Technology in Education](#). Educators should see this academic year as a chance to learn, grow, and not expect perfection.

Additional resources.

Course: [Generative AI in the classroom with Adobe Express](#)

Teaching resource: [Visualize a historical figure with generative AI](#)

Blog: [How to drive student success with creative generative AI tools in the classroom](#)

Blog: [Adobe Express, the fast, easy and fun, all-in-one app, with Adobe Firefly](#)

Blog: [Adobe's approach to generative AI in digital documents](#)

Blog: [Adobe transforms PDF experiences with general availability of Acrobat AI Assistant](#)

Why Adobe for higher education?

Adobe is committed to partnering with educational institutions to drive digital fluency and student success. Our powerful creative and generative AI technologies enable everyone, everywhere to imagine, create, and bring any digital experience to life.

