



Navigating opportunities for AI in education.

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



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AI tools keep changing the education landscape, giving leaders and faculty chances 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, solving science and maths problems, and universities are witnessing their transformative power first-hand. 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 such as AI to create, produce and shape ideas productively and ethically. Addressing AI in education is therefore crucial for realising key opportunities, mitigating risks, and managing unintended consequences.

This publication 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. A concrete starting point will be given by the introduction to Adobe Express, an all-in-one platform for efficiency and collaboration with easy to use generative AI features, powered by Adobe Firefly. As both a product and an embedded model within Adobe tools, Firefly delivers tailored generative AI tools designed to meet creative needs, use cases, and workflows seamlessly and for any subject.

A software application that uses algorithms to perform specific tasks and solve problems.

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

Generative AI is a type of artificial intelligence that can translate text prompts into imagery, text, audio, and synthetic data.



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

In Europe, there is a growing recognition of the importance of enhancing digital education for both students and faculty, as highlighted by the European Commission. Although lecturers praise digital apps, only half use them regularly due to access challenges and educator shortages, especially in STEM fields. Meanwhile, 35% of students feel schools aren't teaching the skills they need for their dream jobs.

Oceane Duboust:
"European students want to learn with AI but many don't have access in schools, survey finds", March 05, 2024.

Students want to learn about topics that prepare them for the future, including AI, and express frustration that this is not immediately available to them.

Felix Ohswald,
GoStudent's co-founder and CEO.

Since the 1980s, the AI in education research field has been all about using AI to improve learning. Organizations like the International AI in Education Society were formed in the 1990s to support this work. Most research has focused on AI that supports learners, aiming to automate teaching tasks and freeing up time 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.

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

■ 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 well-being. As such, educators always need to strike a balance between technology and human interaction. It's therefore essential to involve college faculty in the integration of AI tools,

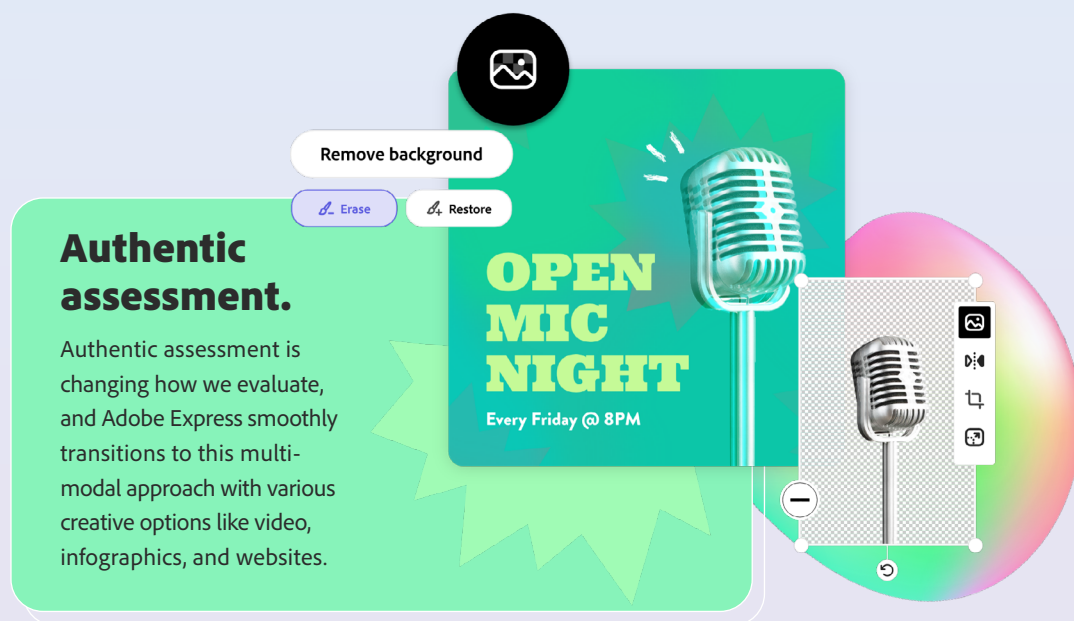
Empower teaching with AI while maintaining ethical integrity.

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”, and “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 tools 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 or a website to circulate their knowledge.

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 practise.



■ Foster digital fluency with Adobe Express and generative AI.

To introduce digital learning methods and encourage students to express themselves with multimedia tools, using an all-in-one solution 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 copyright-cleared content from Adobe Stock, including images, videos, music tracks, and Motion Graphics templates to enhance their projects. Plus, it offers features powered by Adobe Firefly generative AI, ensuring safe usage. The Adobe for Education team has compiled guides and tutorials to help users safely navigate Adobe Firefly generative AI in Express, available at adobe.com/ai.

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 credential measures through the **Content Authenticity Initiative**, allowing students to attach information such as names, dates, and tools used to their content. There are different techniques to embed or identify watermarks or signatures to prove authenticity, indicating ownership and protecting against counterfeiting. These watermarks and fingerprints, although not immune to attack, enhance the ability to efficiently track both AI-generated and human-recorded content, making it more challenging to create convincing fakes and easier to verify the integrity of **real content**. The initiative collaborates with over 900 members to make this solution accessible for all.

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

Hany Farid: "Passive versus active photo forensics in the age of AI and social media", September 26, 2023.

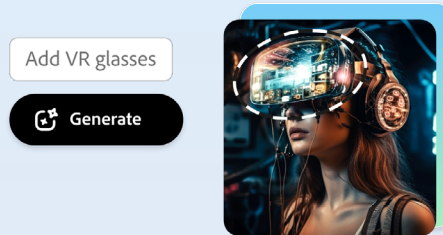
Adobe has taken a thoughtful approach to developing the Firefly generative AI features in Adobe Express. Trained on Adobe Stock images, openly licensed content, and public domain content, generative AI features in Adobe Express are designed to be safe.

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.

■ **Creating efficiently with generative AI.**

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

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

■ **Creativity made easier and more accessible.**

Adobe's 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.

■ **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.

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

■ **Centring 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 emphasises keeping a humanistic view of teaching at the forefront. This concept is built around these key loops: making moment-to-moment decisions; preparing, planning, and reflecting on teaching; and participating in decisions about the

design and evaluation of AI-enabled technologies. The goal is not just to make teachers' jobs easier but to empower them to understand their students deeply and respond creatively to **teachable moments**.

■ Learn from the community.

There are countless resources for educators who want to level up on AI in a hurry. The [Adobe Education Exchange](#) team has built a collection of generative AI teaching resources on their site. There's also the [International Society for Technology in Education](#). In a nutshell, teachers should see this academic year, the initial one post-ChatGPT, as a chance to learn and not expect perfection on the first go.

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

Why Adobe for higher education?

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

To learn more about Adobe licensing options for higher education, contact your Adobe Authorized Reseller or [Adobe Authorized Education Elite Distributor](#).



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