



# AI and Learning

**SUMMARY:** Swiftly advancing artificial intelligence technologies, including generative AI, will transform how and what people learn, driving rapid change in education models and content and affecting training and skill building. Evolving challenges include identifying which skills to teach, how to measure attainment, and how AI can enhance learning rather than undermine it. Associations will find their roles shifting as AI tools integrate their knowledge areas and serve their members and fields.

## Forecasts

- Machine learning and generative AI capabilities are going to present fundamental challenges to existing educational institutions and practices. There will be struggles over what people need to know and how to measure that knowledge.
- AI-based education and training will be experimental for years to come, with widely varying efficacy being sorted out over time. Basic issues of accuracy, bias, and intellectual property will resist resolution.
- AI will change the relationship of learning to performance and achievement. Generative AI may enable professionals to wade into new fields absent extensive learning beforehand. Rewards for deep skill and knowledge may be lower in some fields.
- Specialized and trainable AIs will support learning for people with learning differences and disabilities, with tailored styles of information presentation and features that make content broadly accessible.
- Delivered over smartphones, AI expertise could greatly boost learning in emerging markets, compensating for limited local educational resources.

## Key Uncertainties

*Speed of AI innovation and growth of AI capabilities*

*Speed of adaptation in educational institutions*

*Economics of AI use for providers and users*

*Balance of human augmentation vs. human replacement in AI use*

*Balance of commercial, open-source, and nonprofit AI systems in education*

*Effects of AI on the nature of learning and skill acquisition*



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## Supporting Trends

- **Rapid AI advances.** Artificial intelligence systems are achieving breakthroughs years earlier than expected and showing emergent, unplanned abilities.
- **Personalized AI-driven learning.** Breakthrough capabilities and rising AI usability are making sophisticated personalized learning newly practical. AI systems are being incorporated into tutoring software and being trained on myriad topics and fields.
- **Regulating AI.** Many jurisdictions are developing AI regulations to fight misinformation, discrimination, and other harms. Their nature will differ by jurisdiction. European Union rules are likely to be the tightest and will be seen as a model by other regulators.
- **Psychological effects of AI.** Recent reports, including 2023 studies by the American Psychological Association and Pew, indicate concern about AI advances and their impact on human lives, work, and learning. Analysts note the potential effect of AI encroachment on skills and knowledge central to many people's identities.
- **Trusting AI too much.** People are being misled by artificial intelligence systems based on a misunderstanding of how they work, failing to spot inaccurate "hallucinations" from the AIs.
- **Faking reality.** Technologies for generating misinformation of all kinds, including text and fake images, audio, and video, are improving quickly and becoming universally available.

### Related Drivers of Change

- AI and Intellectual Property
- Preventing AI Harms
- Automating Work
- Changing Information Channels

## Notable Data Points

### AI IN SCHOOLS

An October 2023 study found  
**60% of U.S. educators had used AI in the classroom.**

AI-powered educational games (51%)  
 were the most common use.

*Source: Ilana Hamilton, "Artificial Intelligence In Education: Teachers' Opinions On AI In The Classroom," Forbes Advisor, December 15, 2023.*

### AI TUTOR

In spring 2023,  
**27% of higher ed students reported having used generative AI writing tools**  
 like ChatGPT. By fall 2023, 49% said they had.

*Source: GenAI in Higher Education: Fall 2023 Update, Tyton Partners, 2023.*

### LEVELING EVERYONE UP

A large-scale experiment at consulting  
 firm BCG found that untrained  
 use of GPT-4  
**boosted quality by the bottom half of performers by 42% and the top half by 18%.**

*Source: Eric Bradlow and Ethan Molick, "How Does AI Impact Education?" (video discussion with transcript), Knowledge at Wharton, November 9, 2023.*

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## Strategic Insights

- In a time of rapid change, associations can provide a valuable knowledge function by offering highly current information about relevant AI systems, tools, approaches, and regulations in their fields, including how to use and learn from these systems.
- Associations can develop strong AI knowledge systems that reflect best practices and current information. Such systems will have to be more relevant, up-to-date, and adept than general purpose AIs, which will set an increasingly high bar. Associations will have to decide whether to compete with or collaborate with commercial information services.
- Personalized AI instructional systems could support instruction for continuing education and skill certification for members.
- Like the internet, AI will change the economics of knowledge, and will join niche channels and industry influencers in competing with associations for some kinds of audiences.
- AI-driven shifts in required professional knowledge and skills will require changes in licensing and credentialing to ensure that expertise is effectively assessed. Over time, credentialing may shift away from knowledge testing and instead assess critical thinking, problem solving, and soft skills.
- Associations could certify the quality of educational AI systems in their fields, including factors such as safety and freedom from bias, if they are not offering competing systems of their own.
- Instructional AI systems—especially personalized systems—will come with issues of privacy and employee surveillance that require addressing.

### Timing

- **Stage:** Growing, with widespread but early-phase adoption of emerging tools and systems.
- **Speed:** Rapid, propelled by onrushing innovation in AI.

### Potential Alternative Futures

- **Plateauing.** AI advances turn out to be sporadic, giving society time to adjust to the mid-2020s innovation wave.
- **New breakthroughs.** AI systems achieve more quantum leaps in capability, equaling or surpassing humans in many activities.
- **Shallow learning.** People's direct engagement with information sources is minimized, as AI provides answers readily.
- **Walled AI.** Proprietary systems and the expense of computation restrict the spread and educational usability of high-end AI systems.

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## Take Action

- **Recognize that this topic can be overwhelming for staff, members, and the public**, which could lead to avoidance. Identify a staff champion or advisory group to start the conversations. Work to raise everyone's AI literacy relevant to education and professional development.
- **As AI drives adaptation in learning strategies, systems, and formats**, consider how your association can best serve your stakeholders given your available resources. Can you—and should you—lead with your own technology, invest in or partner with other providers, endorse other providers, or take another approach?
- **Build consensus** on operational guidelines and ethical frameworks for staff, volunteer, member, and business partner use of AI in educational activities. Set data governance and management policies and establish guidelines for AI usage and disclosure. Establish protocols to protect the intellectual property of your association and members.
- **Convene diverse stakeholders** to assess how AI will affect the skills and knowledge that your members will need in the future. How might your industry or profession need to adapt its approach to assessing performance, skill attainment, credentialing, and continuing education? Assess the industry as a whole and look for variations by segment. Consider the extent to which credentialing will focus on a continuum of performance versus a pass-fail benchmark.
- **Consider risks to existing revenue streams.** Develop short- and long-term strategies to adapt your association's approach to developing and delivering educational programs. Look for ways AI can remove barriers found in traditional learning formats and capitalize on innovative ways to incorporate AI into your educational offerings. Use AI to adapt programs so they offer more personalized experiences and just-in-time learning.

### Who Will Be Affected

AI will have growing effects on all associations involved in professional training and education.

### About ASAE ForesightWorks

ASAE ForesightWorks is a deliberate, evidence-based research program and line of products to provide association professionals with a continual stream of intelligence about the changes facing the association industry, including:

- Regularly updated action briefs;
- Tools for applying insights from the research in your association;
- Guidance in performing environmental scans;
- Opportunities to engage with peers around the research.

Ultimately, the program's mission is to empower association leaders to create a culture of foresight in their associations and to lead their organizations confidently into the future.

Check the [asaecenter.org/foresightworks](https://asaecenter.org/foresightworks) webpage and follow ASAE Research Foundation on [LinkedIn](#) for updates on new findings and events.

## Keyword Search

To continue researching this change driver, use these search terms alone or in combination: ***AI, artificial intelligence, generative AI, education, learning, training, universities, teaching, tutor, personalized instruction, personalized learning, LLMs, large language models.***