SPOTLIGHT
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Higher education institutions are at a critical juncture as they strive to adopt and integrate AI technologies. They face pressures to enhance research and learning while safeguarding data, managing costs, and responding to increased digital threats.

Realizing the Full Promise and Potential of AI in Higher Education Requires a More Holistic Strategy

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Introduction

In higher education, AI is both a disruptor and an enabler. The emergence of generative AI (GenAI) in late 2022 fundamentally altered what it means to teach and learn. While fears have emerged about the impact of AI on education, faculty, staff, and students have embraced the technology at a rapid clip. This has led to incredible innovations and new possibilities, but it has also resulted in siloed adoption, shadow IT challenges, and aimless experimentation.

Institutions have struggled to regain control and execute a more strategic vision and approach. As a result, the industry has not yet realized the full benefits and potential of this emerging technology. As agentic AI begins to dominate the discussion and higher education moves into its next chapter, institutions must move beyond fragmented experimentation and siloed adoption to institutionwide, unified strategies.

Leveraging AI as a Strategic Advantage

As institutions seek to shore up these AI strategy shortfalls and take advantage of emerging AI capabilities in 2025, they are focused on four main priorities: building AI-ready infrastructure, creating AI-ready data architectures, establishing stronger AI governance practices, and building AI platforms to better manage and scale AI adoption across campus (see Figure 1).

AT A GLANCE

WHAT'S IMPORTANT

Higher education institutions are at a critical juncture as they strive to adopt and integrate AI technologies, facing pressures to enhance research and learning while safeguarding data, managing costs, and responding to increased digital threats.

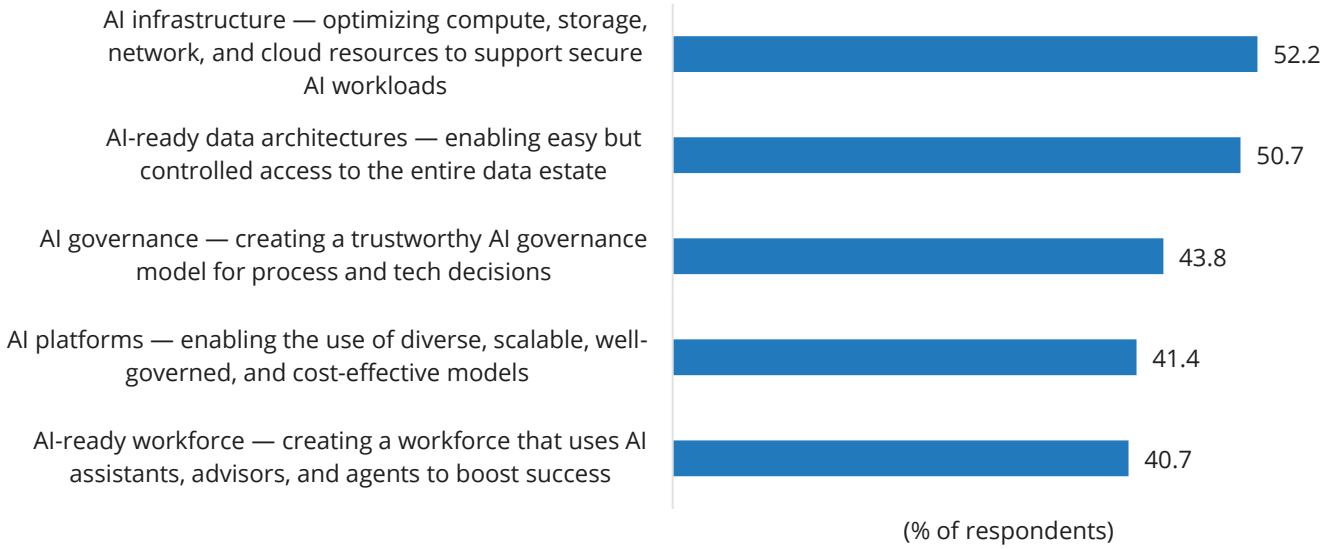
KEY TAKEAWAYS

- Successful AI adoption in higher education hinges on institutional readiness, effective policy frameworks, and the ability to balance openness with security.
- Universities must proactively address issues related to infrastructure, governance, and workforce development to realize the full potential of AI while minimizing risks and unintended consequences.

FIGURE 1: ***Higher Education's Top AI Priorities in 2025–2026***

Building a stronger AI foundation and governance.

Q *What are your organization's top 3 priorities in 2025 in moving from experimenting with GenAI to enabling broader adoption of AI across your entire business and IT stack?*



N = 38 for higher education

Source: IDC's Future Enterprise Resiliency and Spending Survey, Wave 1, February 2025

Higher education is at an inflection point defined by budgetary uncertainty and funding cuts, enrollment and demographic shifts, technological advancements, regulatory changes, rapidly evolving skill requirements, and a larger shift toward competency- and outcome-based learning. AI is a core driver of many of these changes and also serves as a catalyst for institutional, business model, and service delivery transformation as AI reshapes our world and economy. Institutions that embrace AI more holistically have the opportunity to capture a new strategic advantage by serving for students as a model of what an AI-driven work future looks like. This can help boost confidence among prospective and existing students that their chosen institution is equipped to prepare them for in-demand jobs outside of school.

To realize this potential, institutions need a new approach to AI adoption.

The Promise and Peril of AI in Higher Education

Enabling Innovations in Education and Academic Operations

AI has the potential to reshape service delivery and operational models in higher education, offering benefits across academic and administrative domains, such as:

- **Enhanced institutional competitive differentiators:** Institutions can leverage AI to advance research in specialized academic areas or to create unique learning experiences and academic programs.

- **Personalized or tailored learning experiences:** By utilizing AI-powered tools, institutions can tailor instructional approaches to address the needs of individual students, create more high-quality learning content, or craft more engaging lessons.
- **Responsive student services and individualized support:** AI can facilitate more timely and customized interventions to support students when and how they need it.
- **Research acceleration and data analysis:** Integrating AI to expedite data processing and analysis can help increase the pace and potential impact of scholarly work.
- **Administrative efficiency, productivity, and cost savings:** By streamlining operations and automating routine tasks, schools can improve efficiency, reduce costs, and enable institutional agility.
- **Faculty enablement and curriculum innovation:** AI can provide faculty with new tools and resources to innovate in course and curriculum design while enhancing teaching and learning outcomes.

Making the Education Experience More Human

AI's most significant promise in higher education lies in the ability to extend and enhance human expertise, fostering deeper connections and more personalized support across campus communities. When intentionally integrated, AI can provide advisors with actionable insights into student progress, enabling more individualized guidance and timely interventions. For faculty, AI-enabled tools can simplify the creation of engaging learning materials and lesson plans, allowing educators to allocate more time to direct student interaction and office hours–style support. Administrative staff may also benefit because the automation of routine tasks can result in more seamless student services, reducing bureaucratic hurdles and enabling students to engage more fully with academic, professional, and social opportunities. Ultimately, AI can help build more responsive institutions where faculty and staff are better equipped to address student needs and cultivate supportive learning environments.

The Dark Side of AI in Higher Education

AI's promise in higher education is matched by sector-specific risks, especially around data privacy, security, and intellectual property (IP). As universities deploy AI across instruction, research, and operations, adversaries are leveraging generative AI to scale and sharpen their attacks, including highly targeted spear phishing, credential harvesting, and deepfake-enabled social engineering scams that exploit decentralized academic environments and open research networks. The education sector also remains a frequent target for ransomware and data extortion campaigns, with reports highlighting sustained pressure on higher education institutions and the operational disruption that follows.

Beyond "shadow" use of unvetted AI tools that can inadvertently expose student data and research through prompts or poorly governed integrations, higher education faces dual IP risks: accidental disclosure of sensitive or proprietary materials by users and deliberate theft via AI-enabled web scraping, automated data extraction, and model-driven reconnaissance against public-facing repositories and lab sites. Mitigations require treating AI as a capability and risk vector by instituting data minimization, strict access and retention controls, vendor and model due diligence, AI use policies for research data, user training, and incident readiness tailored to academic contexts.

Challenges for AI Adoption in Higher Education

As higher education institutions consider integrating AI technologies, understanding the broader sectoral challenges they face, as well as the specific barriers that impede effective AI adoption, is essential.

Sectoral Pressures

Higher education institutions face a range of ongoing challenges, including:

- **Declining trust in the value and effectiveness of higher education,** which includes growing skepticism about the return on investment and impact of academic degrees
- **Budget constraints and funding volatility** that are part of a litany that includes persistent financial pressures, uncertainties surrounding traditional business models, and unstable funding sources
- **Changing student demographics and expectations** as institutions face student populations with increasing demands for flexibility and relevance in academic offerings that meet the needs of nontraditional age and mid-career learners
- **Workforce-aligned curriculum demands** that reflect the rising need for outcome-based, competency-based, and lifelong learning models tied to career readiness, progression, or reskilling aligned with the needs of the broader workforce
- **Faculty/staff burnout, recruitment, and retention** that are intensifying institutional capacity concerns

AI Adoption Barriers

The adoption of AI technology in higher education faces further limitations:

- **Siloed adoption and lack of coordination:** AI initiatives often remain isolated within specific departments, resulting in duplication of effort and minimal institutional impact.
- **Low AI maturity and limited scalability:** Many institutions lack the expertise and resources necessary to expand promising pilots across an organization.
- **Faculty change resistance and ethical concerns:** Concerns about ethical implications, academic autonomy, and potential disruption lead to hesitancy among faculty and staff.
- **Infrastructure and data/process-readiness gaps:** Challenges with technological infrastructure, data quality, and redesigned business processes hinder the successful integration of AI systems.

Addressing these interconnected sectoral challenges and AI-specific barriers will be essential for institutions seeking to realize the full potential of AI while navigating an evolving higher education landscape.

Considering Cloudflare

Cloudflare is a global cloud-based platform with over 3,500 employees and operating an extensive network spanning more than 310 cities in 120 countries. The company maintains robust interconnections with internet SPs, cloud providers, and academic institutions. Cloudflare's capabilities are structured to provide rapid, secure, and reliable digital

experiences, making them increasingly relevant as higher education institutions accelerate AI adoption and digital transformation.

Cloudflare's core offerings for higher education institutions include:

- **Secure service edge (SSE) and zero trust:** Cloudflare offers identity-driven, zero trust security, enabling institutions to manage access for students, faculty, and researchers. Features such as micro-segmentation, secure remote connectivity, and data loss prevention help universities protect sensitive IP and student records against evolving threats while supporting seamless hybrid and remote learning environments.
- **Application security:** Cloudflare provides a suite of security tools for web applications and online resources. The Cloudflare Bot Management solution enables institutions and researchers to control which crawlers and bots can access their digital resources, publications, and assets. This enables customized consent and permissions, mitigates DDoS risks, and ensures high-priority access for students and faculty while balancing Open Science requirements with the protection of research and proprietary material.
- **Application performance:** Leveraging its Anycast network, Cloudflare aims to optimize content delivery and load balancing across distributed campuses, research portals, and elearning platforms. Integrated analytics and intelligent routing help maintain consistent user experiences during high traffic and support scalable research collaboration.
- **Networking and secure access service edge (SASE):** Cloudflare offers resilient networking capabilities, connecting campuses and enabling seamless interactivity for distributed, global digital research initiatives and operations. SASE capabilities provide fast, reliable dataflows, regional compliance controls, and smart-tiered caching strategies for efficient data management.
- **Cloudflare's Developer Platform:** This platform — including its serverless developer environment and AI gateways/firewalls — empowers higher education IT teams and campus developers to build AI applications securely and cost effectively. This framework aims to reduce infrastructure spending and enhance security for sensitive data, supporting experimentation and deployment at scale.

Collectively, Cloudflare's offerings allow higher education institutions to maintain control over research and data sharing, optimize content access for students, and advance secure, scalable AI adoption within the academic sector.

Challenges

Despite robust offerings, Cloudflare faces several challenges in higher education. The company must expand brand awareness and compete with established incumbents including cloud providers and hyperscalers, AI development platform players, and leading cybersecurity vendors, all of which benefit from deep market penetration and long-term trusting relationships. Institutions are also under pressure to manage tight budgets, particularly as they confront research funding cuts, business model uncertainty, and declining enrollments. These factors often force them to turn to free and open source solutions over paid platforms, making the case for Cloudflare's value and sustainability essential. Finally, the fragmented campus purchasing landscape — where both central IT and decentralized research groups may drive technology decisions — adds complexity to outreach and scaling efforts.

Cloudflare's success in higher education will rely on demonstrating the benefits of the company's approach, addressing budgetary concerns, and helping institutions manage the challenges of digital transformation and AI security.

Conclusion

To realize the transformative potential of AI, higher education leaders must embrace a more comprehensive approach.

This starts with identifying areas where AI can enhance an institution's competitive differentiation — whether through research, distinctive academic offerings, or student experiences. Rather than allowing the pursuit of perfect governance to hinder progress, institutions can begin by establishing practical guardrails, gradually evolving toward governance models tailored to their context.

Successful adoption also requires cross-departmental collaboration and the cultivation of grassroots communities, empowering faculty, staff, and students to contribute to AI initiatives and drive localized innovation. Strategic vendor partnerships can further accelerate progress by combining institutional insights with external technical expertise to address campus challenges such as simplifying AI application development and deployment, protecting sensitive institutional data or intellectual property, or building AI learning opportunities that help prepare students for the future of work.

A holistic approach also requires robust change management and ongoing professional development, ensuring that faculty, staff, and students are equipped to engage with AI in ethical and effective ways. Equally important is fostering transparent, cross-departmental AI leadership and engagement so the entire campus community is aligned with a shared vision and mission. As institutions consider their next steps, assessing current AI maturity and building inclusive, campuswide strategies will be crucial. By thoughtfully integrating AI in alignment with core institutional goals, leaders can position their institutions not simply to adapt to change but to shape the future of higher education.

About the Analyst

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Matthew Leger is a senior research manager on IDC's Government Insights team where he oversees the Worldwide Education Digital Strategies research program. Mr. Leger's research focuses on key IT and digital transformation trends, as well as emerging solutions impacting how primary, secondary, and higher education services are delivered.

MESSAGE FROM THE SPONSOR

Cloudflare recognizes the unique challenges and opportunities that AI presents to higher education. As universities embrace innovation and navigate a crisis of trust, the need to protect sensitive data—from groundbreaking research to student records—is paramount to rebuilding confidence with students, faculty, and the public. This new era demands a platform that is not only fast and reliable, but fundamentally secure and private.

We are proud to partner with IDC to explore the future of AI in higher education. Our mission is to help institutions build the secure digital infrastructure required to drive discovery, protect their communities, and shape the next generation of innovators, all while restoring and strengthening public trust.

Learn more about Cloudflare for Education.

IDC Custom Solutions

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