DELLTechnologies

Universities Are Discovering How Generative AI Fits Their Future

Colleges like Utah Valley University and the University of Oklahoma are adopting generative AI to fit the growing demands of students and the marketplace

When ChatGPT hit 100 million users in January 2023, David Horton was sitting in budget meetings for the IT department at the University of Oklahoma.

"This was all so new, and so fast that we…certainly didn't have a plan at an enterprise level," says Horton, the university's senior associate vice president and chief information officer. "Even if we knew what we should be thinking about, or what investments we should be making…every day there's some new announcement, some new capability and innovation."

In the hectic year since, Horton and his staff hustled to keep up with the technology — to learn about it, explore it, and better understand concerns and the opportunities inherent in generative AI.

He's not alone.

Every higher-ed IT department is simultaneously educating others about generative AI, assessing the technology's impact, and developing a plan to harness and use it at an institution-wide scale to deliver a better educational experience at a lower cost.

Shifting away from AI aversion and towards adoption

If you asked Adam Robyak, field chief technology officer & principal engineer at Dell Technologies, six months ago, he would have told you the majority of staff at colleges and universities wanted to block campus access to ChatGPT and its like.

Faculty worried about students cheating. Administrators feared security breaches.

But many students already use ChatGPT, MidJourney, and other tools to help research topics, write papers, or create images. When they graduate, generative AI is going to be part of their professional lives.

"Students are digital-native," Robyak says. "They use smartphones and social media — AI is just

another thing that they think, 'Hey, this makes my life easier…I need it.'"

Instead of fighting the trend, Robyak noticed institutions doing what they've always done in times of upheaval: Adapt and adopt.

Educators are exploring how AI can help them develop course materials and tutor students. Researchers are using AI to apply for grants or adopt AI as a new area of study. Meanwhile, administrators are implementing AI into alumni outreach, cybersecurity, student assistance, process automation, and more.

"I think the institutions that are doing it really, really well have embraced the idea that AI is a speeding train coming down the tracks," Robyak says. "Jumping in front of it, you're just going to get squished. The best you can do is hop on board and figure out how to use it to best reach your destination or goal."

Generative AI is influencing every area in higher ed — from the classroom to the lab

Universities like Utah Valley are dipping their toes into the generative AI waters with small, directed experiments. The early results show generative

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> **ADAM ROBYAK**
> **FIELD CHIEF TECHNOLOGY OFFICER AND PRINCIPAL ENGINEER, DELL TECHNOLOGIES**

AI has the potential to improve student education, save administrators time, bolster research efforts, and cut overhead.

Developing sophisticated, customized chatbots

Giant lecture hall-style courses can be intimidating for students and overwhelming for teacher assistants. Christina Baum, the vice president of digital transformation and chief information officer at Utah Valley University, is excited about AI's potential to help both parties.

They're calling it "TA In a Box".

The university partnered with a company to upload recorded lectures, syllabi, course materials, homework assignments and quizzes to customize the large language model for an introductory biology course. Students can ask the chatbot questions, and the TA In a Box pores through all of that information to deliver the answer. "For a particular topic, it goes through the syllabus and knows when it was talked about," Baum says.
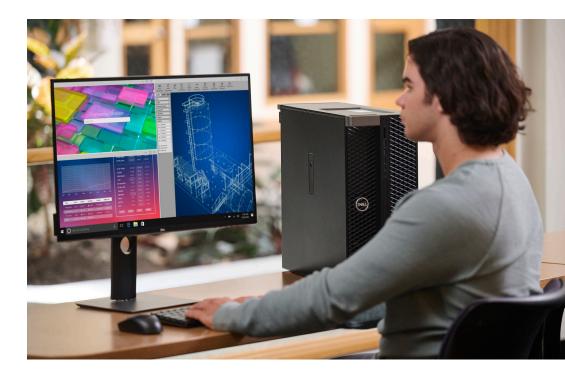
The software is being enhanced to analyze each student's homework assignments and quizzes. Based on what questions a student missed, it puts together a personalized study guide for them to use before the next exam.

AI chatbots have the potential to revolutionize how students learn and interact with course materials. Technology can replicate some of the personal tutor experience which, combined with faculty support and peer discussions, is poised to improve student success.

Crunching research data faster

At a recent [data summit](#) organized at UVU, the keynote speaker talked about partnering with researchers in the social sciences department to analyze early predictors of autism in children.

The work precipitated thousands and thousands of hours of interviews of parents. Grad students used generative AI to synthesize all that information, code it, categorize it, and start running regression analyses to identify patterns and trends. The process took mere days, compared to the months it would have taken.

The ability to move faster on research is huge. "Being able to get that research to market and then partner with a drug or a pharmaceutical company to start employing clinical trials quicker than your competitor — that means big money coming into institutions and universities," Robyak says.

ChatGPT as a writing and coding partner

Generative AI already saves UVU administrators time when it comes to writing everything from

memos to code. Staff already use ChatGPT to write job descriptions, craft emails, summarize meetings, and more, according to Baum.

In the IT department, her team is exploring ChatGPT to overhaul programming languages written in the internet's Cretaceous era. "We've got some old applications that are written in the language old video stores used," Baum says.

Her team is exploring how ChatGPT could rewrite all that archaic language into modern tongue like Python in much less time than they could on their own.

Cutting costs through automation

College enrollment has [dropped in the last decade](#). And though that trend slowed in the last year, Baum thinks universities must find ways to control costs to reverse the trend.

Higher-ed institutions should target areas like student admissions, financial aid, and transcript reviews for opportunities to [automate processes](#).

For example, AI can extract the necessary data from a student's paperwork no matter what the file type is. Then, it can populate that information into a standardized format that administrators can sort, filter, and analyze.

"If we can remove some of the administrative burden and allow [staff and faculty] to have more time to focus on…that outreach to the student, that personal touch, I think we can help shepherd our students through the educational experience in a better way."

Selecting the right generative AI models and platforms

Very few, if any, higher-education institutions are going to build their own large language model from scratch, according to Robyak at Dell.

"You may have, like, a super gigantic research center institution that has the capability of doing that, but for the most part, they're going to go download and consume open-source models like Meta's LLaMA 2, Hugging Face, or Falcon," Robyak says. "They're going to look at: Can we customize it to be more applicable to our use case?"

Training and fine-tuning generative AI models is a major endeavor. It takes specific skill-sets and

a significant investment of time and money. Administrators need to consider what data sources to feed into the model, what types of questions to allow the system to respond to, and how to protect all the private data.

When institutions commit to building out all those systems, there's lots to contend with. It's often easier to buy tools through a third-party vendor with the expertise and pre-existing infrastructure.

"We really are relying on our vendor partners that are providing these tools. The costs to get into this at [scale]…are amazingly high, so the vendor ecosystem is going to be incredibly important," Horton says. "And you know, there's a handful of big ones and there's a whole ecosystem, along with new ones…that are starting up and doing really cool stuff."

Overcoming the challenge of gaining buy-in for generative AI on campuses

"The biggest challenge to the adoption of any technology, not just AI, is the ability to adequately articulate — from the bottom up — the value that it brings," Robyak says.

In his experience, once you've built excitement about the idea, people are less likely to stonewall change. Instead, the conversation becomes all about understanding the program's goals, and how to achieve those goals efficiently.

> It's all a living, evolving document. The AI industry is simply changing too fast to set anything in stone. But the best time for universities to start this work is now.

This is the process Baum is working through now at Utah Valley University. The university has put together a cross-functional AI task force to evaluate the potential benefits and pitfalls of AI in every area of the institution. In 2024, she is putting together a "traveling road show" of workshops to gather feedback and generate ideas of how each department could put AI to use.

"It's really hard to wrap your head around 'How much do we need for an investment in this? What are the top priorities?' So, I think identifying that first is important," Baum says. "Then we can come to the table and say, 'OK, here's what we need to do. Here's the budget ask. Here's the things we would do with it. Here's the return we're expecting.'"

Robyak pointed to Baum's "TA In A Box" pilot project as an excellent example of starting with an AI initiative that is easy to understand, manageable to implement, and provides value right away.

Use cases like the UVU tutor give administrators an opportunity to script out an AI, answer the questions that crop up during implementation, and begin to build a set of best practices and policy guides for instituting AI.

In Oklahoma, Horton pointed to a stack of papers on his desk. He says

there's been a flurry of policy effort at the university to establish how students, professors, administrators, and researchers can appropriately use AI. Other resources are being developed covering how to mitigate against inherent bias and "hallucinations" where AI models provide false information.

It's all a living, evolving document, he added. The AI industry is simply changing too fast to set anything in stone. But the best time for universities to start this work, he insisted, is now.

Embracing AI in academia from innovation to integration

Instead of trying to block AI, institutions should proactively incorporate this technology into course development, tutoring, research, and back-end processes to enhance student education and reduce university costs and administrative time.

Horton thinks higher-ed institutions are uniquely positioned to make the most of AI's capabilities. He leans back in his chair and spreads his arms wide as he explains. "We've activated several AI capabilities in our productivity and collaboration tools, making them available within our private tenants so we can all learn together."

"That's the great thing about living and working within an education community. You're surrounded by people that want to teach, and show, and help you learn in an organic and collaborative way," Horton says.

The challenge, then, is to harness all that individual professional curiosity, cultivated intellect, and earned experience into an enterprise approach to generative AI.

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