Integrating Generative AI into University Curricula: Current Practices and Challenges

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Introduction

The rapid advancement of generative AI is transforming industries worldwide, including higher education. Its widespread adoption has made it an influential tool with the potential to enhance the learning experience. As universities begin integrating generative AI into their curricula, it is crucial to assess both the opportunities and challenges associated with its use. This report examines how universities are currently incorporating generative AI into their programs.

Understanding GenAI and it's role

Generative AI (GenAI) represents a transformative force in education, acting as an ever-present tutor that enhances learning experiences. While the concept has existed for years, recent advancements—spurred by innovations like the "Attention is All You Need" paper—have made it more powerful and accessible. At its core, GenAI functions like an advanced autocomplete, trained on vast amounts of internet content, including textbooks, research papers, and educational materials. This enables it to assist students in answering questions, generating ideas, and deepening their understanding of complex topics. Although concerns about academic integrity exist, the potential benefits far outweigh the risks. By providing personalized, on-demand support, GenAI empowers students to engage with knowledge more effectively, making high-quality education more accessible than ever. As John Henry Newman put it, "We must come to the teachers of wisdom to learn wisdom"—and now, that teacher is always within reach.

Current trends in GenAI across universities

The following section examines how various universities are right now integrating GenAI into there curriculum:

1. **AI as a thought partner**

One concern shared by professors from many universities was related to the writing skills for the students. If AI can do the writing for students, this derails the process of learning how to write.

Instead of banning AI from the course curriculum, professors from New York University (NYU) have adopted generative AI tools like ChatGPT to enhance the writing process. Rather than allowing ChatGPT to complete assignments for students, the professors used it as a tool to enhance the writing process. Prof Karen Lepri adapted a film synopsis assignment by having students compare their own summaries with those generated by ChatGPT. This helped students gain authority over their topic and writing, while also understanding broader cultural conversations. Prof. Alexander Landfair had students train ChatGPT to follow specific rhetorical rules, which highlighted the complexities of writing, understanding an audience, and effective expression. Both professors emphasized the importance of students assuming authority over AI tools.

These show that generative AI can be used as a 'thought partner' in the writing process, rather than a substitute for it. And also comparing student-generated content with AI-generated content can reveal insights into the writing process, audience awareness, and rhetorical strategies. There was also an exercise where students evaluated ChatGPT's summaries of articles, noting its limitations and biases in class. Such engagement with AI in the classroom can help students recognize the tool's limitations and biases.

2. AI as a chatbot

With the introduction of custom GPTs, ChatGPT has significantly enhanced the potential of AI to transform the learning experience. Sanghoon Park, a professor of teaching and learning at the University of South Florida, has developed an AI-powered chatbot designed to provide motivational messages to students enrolled in his online class. The chatbot is seamlessly integrated with the online course page, enabling students to access academic assistance and emotional support with a single click.

In parallel, the University of Georgia, Morgan State University, and the University of Central Florida will implement chatbot technology in their first-year mathematics and English courses commencing in the fall of 2024. This initiative is part of a Department of Education grant

program aimed at investigating the impact of chatbots on student outcomes. The chatbots will serve as a resource for students, answering inquiries regarding course material, reminding them of upcoming assignments, and offering motivational support.

In Fall 2023, the University of Mary Washington offered a special digital studies course focusing on ChatGPT and generative AI. Led by Dr. Anand Rao, the course explored the possibilities and challenges presented by these technologies. A key element involved students building their own GAI tools using platforms like PlayLab.

Several student projects were highlighted:

- Book Recommendation Bot: An interactive chatbot providing custom book recommendations based on user preferences.
- ASCII Bubble Art: A bot designed to create ASCII bubble art from text inputs, which demonstrated the limitations of AI in visualising art.
- Social Media Marketing Short Form Content Generator: A tool to create short-form content for social media, improving efficiency for marketing tasks.
- Grammar Helper: A chatbot trained on both African American Vernacular English(AAVE) and Standard American English(SAE) to assist students with grammar.

Impy, a chatbot created by Carl Follmer for his business communications class at the University of Iowa's Tippie College of Business, is designed to play devil's advocate. It politely disagrees with students in 10 sentences or less, generating counterpoints and alternative perspectives. Professor Follmer believes this approach fosters critical thinking and empathy toward diverse viewpoints.

3. AI as a course topic

Universities are now including AI in all departments and not just computer science. American University's Kogod School of Business updated their curriculum in fall 2024 to teach students prompt engineering and programming as well as coding in R, Python and AI/ML models.

Incoming students will also be required to complete AI courses and workshops as part of the undergraduate core curriculum.

Boston University's AI-intensive Writing, Research & Inquiry Courses initiative integrates AI tools like ChatGPT into first-year writing programs through pilot courses in the CGS Rhetoric (CGS RH 103) and CAS Writing Program (CAS WR 152). Led by CAS Writing Program Director Sarah Madsen Hardy, the project emphasizes ethical AI use, fostering student-instructor collaboration, and designing assignments that balance AI's benefits and risks. Undergraduate AI Affiliates work with instructors to test AI-driven approaches, support students, and ensure transparency in the writing process, with the program expanding from six initial course sections to eight in its second year. Long-term goals include equipping students with interdisciplinary AI literacy, developing faculty expertise through workshops and resources, and shaping university-wide academic integrity policies. The initiative aims to responsibly harness AI's potential as a collaborative tool while addressing equity and relevance in writing education.

The State University of New York (SUNY) has made AI literacy a core component of its general education curriculum, requiring all students to engage with AI-related ethical issues, such as misinformation, bias, and responsible AI use (Inside Higher Ed, 2025). Faculty are encouraged to embed AI discussions into diverse disciplines, fostering critical engagement with AI-generated content.

4. AI as a tutor

GenAI tools can serve as always-available tutors, ready to answer students' questions 24/7. Many professors who responded to a survey conducted by the Chronicle Of Higher Education is fine with students using AI as a study guide, help students' brainstorm ideas or polish their writing. Briana Morrison, an associate professor of computer science at the University of Virginia noted AI tools can be used to generating practice quiz question. Prof. Ethan Mollick from the university of Pennsylvania believes that AI makes learning more equitable and help in providing a personalised learning experience.

5. AI initiatives

Many universities are now launching AI initiatives to explore how generative AI can be harnessed to enhance the learning experience and prepare students for an AI-driven future.

The University of Florida's AI Learning Academy provides professional development courses for higher education faculty and administrators to integrate AI into curricula and upskill educators for an AI-enabled workforce1. Launched as part of UF's broader AI initiative—which includes 200+ AI courses across 16 colleges and 12,000+ annual enrollments—the academy offers a low-cost, four-day training series covering AI foundations (history, machine learning), ethics (algorithmic bias, societal impacts), and practical applications (curriculum design, AI tools in pedagogy).

The National Institute on Artificial Intelligence in Society (NIAIS) is an independent nonprofit think tank affiliated with Sacramento State University, dedicated to guiding AI integration across sectors through policy, resources, and professional development. It develops commissioned reports and recommendations for governments, businesses, and educational institutions, curates case studies on successful AI applications, and creates accessible AI tools and guidelines. Additionally, NIAIS provides training, AI tool validation, and consulting services to support organizational AI adoption. While operating independently, it collaborates with Sacramento State on projects to promote ethical and effective AI implementation in society.

6. ChatGPT Edu

ChatGPT Edu is an education-focused version of ChatGPT, designed to support students and educators with AI-powered learning. It offers personalized tutoring, instant feedback, and assistance with research, writing, and problem-solving. By providing 24/7 access to knowledge and adaptive learning support, ChatGPT Edu enhances engagement and fosters deeper understanding across various subjects.

California State University has deployed ChatGPT Edu to over 460,000 students and 63,000 faculty, providing AI coaching, training, and certifications to enhance learning, curriculum development, and personalized tutoring across disciplines. Meanwhile, Arizona State University, has integrated ChatGPT Enterprise to advance teaching, research, and administrative efficiency while ensuring data security. ASU faculty and staff can propose AI applications for student success, with potential expansion to students. Both initiatives highlight a shift toward AI-assisted education, fostering personalized learning, AI literacy, and workforce readiness.

Challenges and Considerations

1. Ethical and Academic Integrity Concerns

   AI-generated content raises concerns about plagiarism and misinformation. Scholars like Sam Wineburg argue that without foundational digital literacy, students may struggle to critically assess AI-generated information (Inside Higher Ed, 2025). Institutions must establish clear policies on responsible AI use.

2. Faculty Hesitancy and Training Gaps

   Many faculty members remain skeptical of AI's role in education due to concerns about de-skilling and overreliance on automation. Effective faculty development programs are essential to equip educators with the knowledge and skills to integrate AI responsibly (Supiano, 2024).

3. Equity and Access Issues

   AI tools must be equitably accessible to prevent exacerbating existing educational disparities. Universities should ensure that students from diverse backgrounds have the resources and training needed to leverage AI effectively (Supiano, 2024).

4. Workforce Readiness and the Future of Entry-Level Jobs

   AI is reshaping entry-level positions, potentially eliminating traditional pathways for professional development. Universities must adapt curricula to prepare students for AI-

augmented careers, emphasizing experiential learning and apprenticeship opportunities (Carlson, 2025).

Conclusion

The rapid growth of generative AI in recent years is set to continue, bringing both opportunities and challenges to higher education. While AI presents some drawbacks, its benefits—particularly in revolutionizing learning and teaching—are undeniable. As AI becomes increasingly integrated into academia, universities must adopt a proactive, thoughtful approach to ensure its successful implementation. This includes fostering AI literacy, addressing ethical concerns, supporting faculty, and ensuring equitable access. By balancing innovation with academic integrity, institutions can equip students to engage with AI responsibly, using it as a tool to enhance human learning and creativity rather than replace it.