

Generative AI: A University's Approach to Understanding Opportunities and Challenges

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Abstract

This paper reports preliminary findings from an ongoing, campus wide research project on effective methods for generative AI applicability in pursuit of effective and engaging teaching and learning activities. Generative AI has had a tremendous adoption rate since the public release of ChatGPT 3.5 on November 30th 2022. This has necessitated that educators and administrators consider the potential opportunities and threats usage of generative AI by students and faculty may have on higher education. Recognizing the inevitability of generative AI, the researchers have proposed a university-wide research project to ascertain the changes in faculty and students perspectives when using generative AI. The research project is two-fold. First, a longitudinal survey has been developed to address research questions about usage and perceptions of generative AI change over time.

The second prong of this research project focuses on the implementation of new and continuing generative AI professional development workshops. These "AI Institutes" are targeted educational opportunities to provide faculty, staff, and students with hands-on experiences that model appropriate ways to teach and learn with generative AI tools. Workshops change based on audience needs, but will be designed to support such processes as introductory and advanced lessons on building learning activities which engage students with generative AI, administrative shortcuts, best practices for writing, and our university's AI policy and principles.

The longitudinal survey, thus, allows the research team to gauge changes in perspectives as the "AI Institutes" are deployed and widespread adoption of generative AI tools become more mainstream. This paper reports on the first year of this research project, including one survey and one AI Institute.

This research on integrating generative AI technologies into teaching and learning has important implications for the field of networked learning. As the paper explores, rapid advances in AI are changing how students and faculty interact with content and each other. Findings from the longitudinal survey and AI Institutes could provide insights into how to thoughtfully leverage these emerging tools to enhance connections, dialogue, collaboration, and co-creation of knowledge within digital learning networks.

While further research is needed, this project takes an important first step in assessing faculty and student perceptions that can inform appropriate AI integration. Lessons learned could guide other institutions exploring the potentials and pitfalls of weaving generative AI into networked learning ecosystems.

Keywords

Generative AI, AI Institutes, Teaching and Learning Ecosystems

The Rise of Generative AI

The rise of generative AI has been nothing short of revolutionary, with its rapid adoption across various domains, and the field of education is no exception. Generative AI, powered by advanced deep learning models, has the potential to transform teaching and learning (Brown et al., 2021). ChatGPT rose to one million users in 5 days, as compared to platforms like X, formerly Twitter, Facebook, and Instagram, which reached one million users in 2 years, 10 months, and 2.5 months, respectively (Paul, 2023). This demonstrates how quickly generative AI is being adopted, and why higher education institutions need to approach the emerging technology with knowledge rather than fear.

One of the driving forces behind the rapid adoption of generative AI in education is its ability to automate and enhance the creation of educational content. With tools like ChatGPT, professors can generate learning activities at a faster rate. Instructional designers can create SMART learning objectives instantaneously, and students, for better or worse, can produce deliverables by copying and pasting an essay prompt into ChatGPT.

Situating our AI Research in Networked Learning

While a single, concise definition of networked learning remains elusive, we situate our research in the holistic view of “networked ideas of change, human agency and learning” (NLEC et al., 2021). Generative AI presents a novel “entanglement” between people and things. As networked learning is reflexive and dynamic in nature, it is necessary to consider the impact on human relationships, technologies, and the process of learning (NLEC, 2021). This research approach takes a transformative perspective of networked learning, considering the three levels of interconnection between the internal, external, and social communities (Lee and Bligh, 2023). Thus, this research is not restricted to inquiry within the classroom context, but rather, more broadly considers the meaningful ways knowledge is acquired through all aspects of the learners’ life. Moreover, the learner in our research context is not just a student, but also the faculty and staff that contribute to a students’ learning experience, and are themselves facilitating new learning pathways with generative AI.

The Generative AI Task Force

To address the opportunities and concerns that generative AI will have in higher education, our institution has put together a Generative AI Task Force. This group of faculty, staff, and students have the following objectives:

1. Identify opportunities and challenges using generative AI for academics at our university, and develop a comprehensive policy to be integrated into our Student Handbook on Academic Honesty.
2. Identify potential changes in the workforce that will impact our graduates, and co-develop a strategy with community stakeholders for our university to be able to adapt with shifts in future career paths.
3. Identify members of our community stakeholders and co-develop workshops, discussions, and public forums on the ongoing advancements of generative AI and its implications.

The Research Project on Generative AI

As a part of the Task Force’s objectives a research project has been developed. The research project is two-pronged and consists of an educational aspect and an evaluation of faculty, staff, and students usage and perceptions of generative AI over three years. While we recognize that generative AI is going to continue to rapidly evolve, a three-year research study assumes that human adoption will not keep pace. The research project asks the following research questions:

1. How is generative AI being used by faculty, staff, and students?
2. What are some barriers that hinder generative AI usage by faculty, staff, and students?
3. What are some opportunities that positively develop generative AI usage by faculty, staff, and students?
4. How does generative AI adoption change over time?
5. What are faculty, staff, and students' perceptions of generative AI policies?
6. How does faculty, staff, and students' perceptions of generative AI policies change over time?

A survey has been developed using the Information Systems Success Model (DeLone & McLean, 1992) along with qualitative questions to ascertain which generative AI are being used, how they are being used, and what educational workshops students, staff, and faculty would like to participate in. The survey will be deployed in January 2024 and again in Fall 2024 and Fall 2025.

The second prong of the research project consists of developing and conducting AI Institutes. These workshops focus on faculty and staff or students. This allows the content delivered to focus on best practices for targeted groups of university stakeholders. For example, the AI Institute for faculty and staff will address ways to perform administrative tasks with generative AI, how to create engaging learning activities, and prompts for developing measurable learning outcomes. AI Institutes for students will focus on how to use generative AI appropriately for learning activities, such as writing tasks and data generation. Workshops on general wellness, including ways to develop study plans and organize weekly activities can also be designed and delivered. Each AI Institute will also host and moderate an open forum for faculty, staff, and students to voice their thoughts on the university’s AI policies and principles. Most importantly, the surveys will ask faculty, staff, and students what topics about generative AI they are most interested

in. In this way, we can be responsive to the needs of our community. As a longitudinal research project, we expect that usage and perceptions will change over time AI Institutes are rolled out and overall adoption of generative AI tools increase.

Preliminary Findings

At the time of this proposal, the IRB process has been initiated and our first AI Institute is being designed. By the time the 2024 Networked Learning Conference occurs, this research team will be able to discuss preliminary findings regarding the first survey deployment and the first AI Institute. The first AI Institute will focus on faculty and staff. We have begun a soft launch of our learning management system, Blackboard's AI design assistant. This AI tool aids faculty in creating learning modules, creating test question pools, developing rubrics, and sourcing and aligning royalty-free images. We will report on lessons learned from the first year of our AI Task Force and research project.

In conclusion, generative AI is reshaping the educational landscape. The potential applications are promising more accessible, engaging, and effective education, specifically for our online student population. Our AI Task Force aims to address the opportunities and concerns facing our institution. We believe our first steps and lessons learned can serve as a foundation to other institutions interested in developing a similar research program, potentially providing ways to collaborate across institutions interested in how generative AI will affect networked learning.

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