

# A WCET Closer Look at...

## Generative Artificial Intelligence (AI)

The goal of this Closer Look is to provide deeper understanding of generative AI models and the impact they may have on higher education.

### Overview of Topic

With the November 2022 release of ChatGPT by OpenAI, higher education faculty, staff, administrators, and students have all started contemplating the role of artificial intelligence in the classroom.

AI in higher education is not new; many institutions use chatbots to answer student questions, computerized tutoring systems, or predictive learning analytics. But the ability of students to use AI to generate essays, code, and digital art with ease through a chatbot is new and has raised numerous questions about academic integrity, the nature of learning, and the role of technology in the academic classroom.

## Three Main Takeaways

### AI Will Change Assessment

Generative AI will change how we approach assessment as the focus shifts from recitation of information to application and deep analysis.

Faculty and instructional designers will have to rethink certain forms of assessment such as multiple choice, short answer, and short essay.

# 1

### AI Will Impact Academic Integrity Policies

Institutions need to review and rethink their academic integrity policies to account for generative AI tools like ChatGPT. Will the use of these tools be banned outright? How should the use of such tools be attributed, if allowed? Are there limited circumstances where the use could be appropriate?

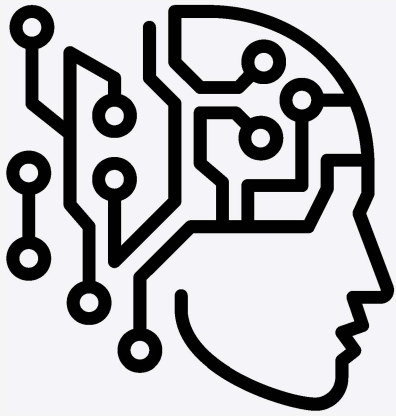
# 2

### AI Will Impact the Workplace

In the near future, we will see a hybrid human/AI work environment, and understanding how to use generative AI will be a critical digital skill. To be competitive, students will need to know how to use these tools to produce a variety of work products, by knowing how to craft prompts, evaluate responses, and guide AI into creating appropriate output.

# 3

# Related Definitions

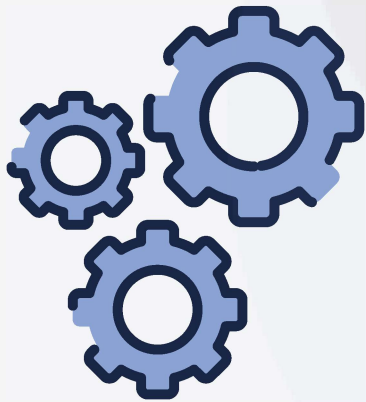
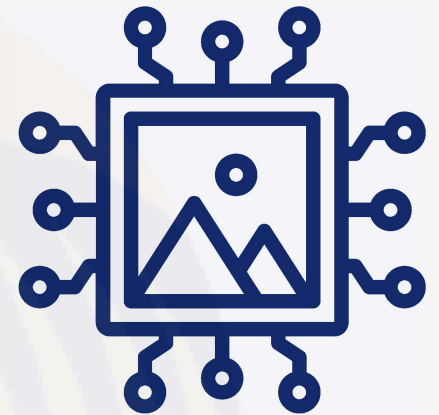


## Artificial Intelligence

Stanford University's Human-Centered Artificial Intelligence group defines artificial intelligence as "a term coined by emeritus Stanford Professor John McCarthy in 1955, was defined by him as 'the science and engineering of making intelligent machines.' Much research has humans program machines to behave in a clever way, like playing chess, but, today, we emphasize machines that can learn, at least somewhat like human beings do."

## Generative AI

Artificial intelligence that can create new content such as text, visual images, code, audio, or video. This might include digital art, essays, short answers, blog posts, computer code, press releases, and other types of novel content.

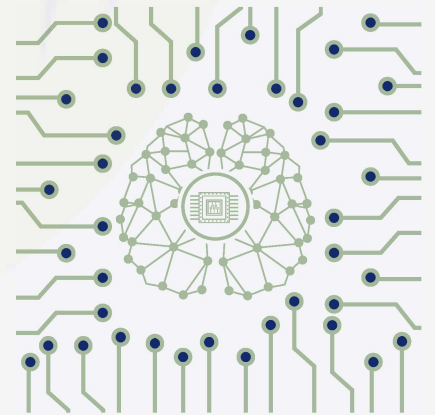


## Machine Learning

Machine learning was defined by AI pioneer Arthur Samuel in the 1950s as "the field of study that gives computers the ability to learn without explicitly being programmed." Often times this now happens via neural networks.

## Large Language Model

A language model is trained on an enormous amount of text so that it is capable of predicting a given sequence of words. This capability allows the model to "understand" inquiries and replicate human language in a largely coherent way. Large language model AI is considered to be generative.



***Just as electricity transformed almost everything 100 years ago, today I actually have a hard time thinking of an industry that I don't think AI will transform.***



*Andrew Ng,*

*founder of DeepLearning.AI and co-founder of Coursera*

# Real World Examples

Many institutions are beginning to experiment with the development of generative AI assignments in a variety of courses.

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**The University of Mississippi's** Department of Writing and Rhetoric's AI working group is exploring the use of generative AI tools to help with student writing. These tools include GPT-3, ChatGPT's predecessor, and Elicit, which, when prompted with a research question, can provide a summary of articles.



Students reflected that the scaffolded AI assignments enhanced their research and writing. For example, one student said, *“Some of the ideas that Elicit gave me I had already thought of, but the ones that I didn't have were outside my scope of thinking, which is really helping me start to expand on new ideas.”*

For more information on the University of Mississippi's work, you can read Marc Watkins' December 2022 [blog post](#) for [Inside Higher Ed](#).

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Other faculty such as Ethan and Lilach Mollick at the **University of Pennsylvania's** Wharton Business School recommend that faculty intentionally incorporate generative AI into their classes.

In their article, “New Modes of Learning Enabled by AI Chatbots: Three Methods and Assignments,” the Mollicks propose the following assignments:

- Ask students to prompt ChatGPT to write a paper and then students should critique and then revise that paper.
- Have students ask AI to create three scenes that demonstrate a concept, critique the scenes for accuracy, and create strategies to improve the accuracy of the AI response.
- Have students ask AI to explain the steps of a concept, review for accuracy, then revise those steps by adding and removing steps as needed.



# DEI and Policy Considerations

## Considerations for Diversity, Equity, and Inclusion Related to Generative AI

There are a number of equity considerations surrounding the use of generative AI. Here we discuss two:

1) Algorithmic bias: Generative AI is trained on enormous data sets largely scraped from the internet that reflect societal bias. Additionally, AI code reflects the bias, often unconscious, of its developers. As Kate Crawford writes in her recent book, *Atlas of AI*, "There is no neutral ground for language, and all text collections are also accounts of time, place, culture, and politics. Further, languages that have less available data are not served by these approaches and so are often left behind."

2) Equitable access: As the ability to use generative AI becomes a critical digital skill in the workplace, students who lack the hardware, software, and/or bandwidth to learn how to use AI will be disadvantaged in the workforce. Additionally, although tools such as ChatGPT are currently free, there is no indication or guarantee that they will remain free, thus creating another access challenge in the already gaping digital divide.

## Considerations for Policy or Regulatory Issues Related to Generative AI

AI is currently unregulated. Institutions should examine their institutional academic integrity policies to determine if they need to be revised to address student use of AI.

As more work takes place in this area, WCET will endeavor to showcase examples and lessons learned.

## Featured Expert

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