

# Using AI text, image, and music-generating tools in your courses

## WHAT IS THIS RESOURCE?

This resource provides a brief introduction to AI text, image, and music generators and how they can be used as powerful teaching tools to advance student learning.

## HOW DO I USE IT?

Review the considerations below when incorporating AI tools into your courses. [CET](https://cet.usc.edu/contact-us/) is available to discuss pedagogical options for integrating AI text, image, and music-generating tools. For questions regarding academic integrity please contact the [USC Office of Academic Integrity](https://academicintegrity.usc.edu/).

### What are AI Generators?

AI Generators are a relatively new technology that can synthesize information drawn from different sources in a meaningful way, resulting in text or art-based products that, on a basic level, are comparable to those created by humans. There has been concern in the educational community that this technology could be used to produce students’ academic work, and indeed it can. In some cases, the output of an AI generator is indistinguishable from work produced by a human, which means it may be impossible to detect. Given this significant leap in technological capability, and the innumerable challenges to limiting or detecting its use, the question has been raised: How can we capitalize on the benefits AI provides by incorporating, rather than restricting, its use into the curriculum?

In fact, many have already made a strong case that AI capability can help advance learning (and knowledge) further and faster than was previously possible. In much the same way calculators advanced mathematics, and computers and search engines have advanced most fields of study, with slight modifications to how learning activities are approached, AI Generators can be used to advance the learning of higher-order skills, such as application, analysis, and evaluation, earlier in students’ education. Incorporating AI into the curriculum can also provide training and practice for students entering professional environments where the use of AI will undoubtedly be a required skill.

AI text generators use large amounts of data and computing techniques to make predictions about how words should be strung together in meaningful ways. Access to so much data results in an enormous vocabulary and vast amounts of information at their disposal. This coupled with their ability to understand words in context, allows them to mimic speech patterns to communicate ideas while drawing from an encyclopedic knowledge.

AI image generators also use algorithms and statistical models to create art. Text prompts are used to describe the type of art a user wishes to create. Some generators include additional styles and parameters that can be set by users to make the results more unique.

It is important to remember that AI generators are completely reliant on the information to which they have access, and their output will only be as good as that information. For example, bias that is inherent in the information they draw from will very likely show up in the output they produce, creating a risk of perpetuating biased beliefs or experiences. They are limited in their accuracy, utility, and analysis of information because they do not have the same level of knowledge, experience, and nuanced understanding as a human expert. Therefore, consideration about the use of particular topics and training for students in how to evaluate the output would be valuable.

A list of some of the most popular AI text, image, and music generators is included at the end of this document.

AI Generators do create concerns about academic integrity issues. For questions regarding this topic please contact the [USC Office of Academic Integrity](https://academicintegrity.usc.edu/).

### General accessibility, equity, and ethical concerns

* At the current time, many AI Generators are free. There is speculation that this might change in the future. If you decide to incorporate these tools into your assignments, consider options that all students can access.
* Not all of the platforms for AI Generator tools have been designed to be accessible to all users. [OSAS](https://osas.usc.edu/) can consult with you on access barriers that might be present for students identifying with vision impairments, mobility impairments, and those who use assistive technology.
* It's important to educate students on the limitations and potential biases of AI-generated content and encourage them to use it responsibly.
* The following is a list of ethical concerns generated by ChatGPT in response to the prompt “*What are the ethical concerns related to using AI authoring tools?”* and edited for clarity by CET:
  + Plagiarism: AI authoring tools can make it easier for students to plagiarize, as they can generate text that is similar to existing content. This can make it more difficult for teachers to detect plagiarism and can undermine the integrity of the educational process.
  + Lack of originality: AI-generated text may lack originality and creativity, which can negatively impact the student's ability to develop their own writing style and voice.
  + Bias and Discrimination: AI models may perpetuate and reinforce existing biases and discrimination in the data they were trained on, leading to unfair or unjust results.
  + Lack of understanding: Students may not understand the limitations of AI-generated content, which can lead them to rely too heavily on technology rather than developing their own critical thinking and writing skills.
  + Privacy: AI-generated content is often created from data entered by the user. Data entered into AI, or any other resource, should be carefully considered before inputting since personal data such as financial information, personal health, or identification numbers could cause harm if misused. Users should comply with data privacy laws and policies to prevent misuse.
  + Misuse: AI-generated content can be used in ways that are not legal or ethical, such as creating fake news or impersonating someone else.

### Ideas for incorporating AI Text, Images, and Music-Generators in your course.

#### Evaluate AI text-generated writing, images, or music

Use a generated essay or image to model positive and negative aspects of the creation. Provide students an opportunity to evaluate the text, image, or music to develop and improve their critical thinking skills. Consider individual or group assignments that are synchronous or asynchronous.

For example:

* Have students use AI tools to compare and contrast their own personal writing with what is generated. Have them identify what they, or the AI tool, missed and as an opportunity to analyze the various approaches they could have taken.
* Have students create a rebuttal, an artwork, or a performance piece in response to what was generated by the AI program.
* Generate an essay using AI tools, and hold an in-class discussion. Is the argument of the text generated too predictable or too superficial? What improvements could be made?
* Have students evaluate AI-generated text, images, music, and code for biases.
* Create a character and environment for a video game. Have students critique the outcome. Is the lighting and texture of the image realistic? Is there bias inherent in the imagery or storyline?

#### Getting started on an assignment

AI tools can be used to brainstorm for papers and debug coding problem sets. They can also be used to formulate and iterate question prompts to refine responses. Frame using AI tools as something to build upon. Remind students of the best way to use these tools in their discipline, such as for idea generation, essentializing, brainstorming, or gathering information about the typical understanding of a topic. All uses of AI tools should be supplemented with appropriate evidentiary support and reflection.

For example, you can use AI generators to:

* Have students create an outline of a paper.
* Have students diagram or identify specific research topics they wish to explore based on AI-generated text, images, or music.
* Brainstorm various artwork styles applied to an image.
* Create images to prompt a reflective essay.

### Considerations for assignment design in the age of AI generators.

#### Connect your assignment prompt questions to specific course materials

Definitions and common comparisons can be easily completed by an AI text-generating tool. Consider more nuanced questions related to the course text, articles, media, or activities. At this time, AI does not conduct in-depth analysis or critically evaluate arguments.

Examples of customizable assignment prompts and ideas:

* Compare the three definitions of sustainable business discussed in the readings this week and explain which one most closely aligns with the ethical perspective you discussed in Week 1.
* Evaluate the methods used in *Johannesen et al* to identify relevant genetic variants. What biases or assumptions are inherent in the authors’ chosen technique? What additional or alternate approaches might be appropriate? What technical limitations or ethical considerations exist in implementing these assays in a clinical setting?
* Compare motifs of nature in Melville to the Hudson Valley School of painting with the aesthetics of Romanticism. Employ the methodological approaches that scholar Peter Gay used in the book chapters read in this course.
* AI music generators may be discussed in music, law, or policy courses regarding copyright and other concerns.
* Clinical environments may benefit from AI generators assisting in writing clear, comprehensive patient notes, findings reports, referral and discharge letters, and other clinical documentation.  Students or clinicians may use chatbots to generate and edit templates as appropriate.
* AI generators may be used to create fictional clinical case studies. Consider using an AI generator in an interprofessional setting to create a case study. Discuss the areas in which bias may be present. Share ideas for areas of improvement from different professional perspectives (e.g. medical, nursing, pediatric, geriatric, social work, dental, optometric, pharmaceutical, etc.). Consider how each profession could address the case and how collaboration may occur.

#### Use in-class time for students to complete assignments and assessments

Have students complete assignments and assessments in class. This can be done individually or in groups. Note: if you are requiring handwritten responses, keep in mind that some students may have accommodations in place that allow them the use of a computer or assistive technology.

Ask students to connect course material to experiences they have had at work or in their personal lives.

Encourage students to provide original insights and perspectives. Reflection assignments require students to describe their own learning, how it changed, and how it might relate to future learning experiences. These assignments can also encourage students to relate the course materials to their own lived experiences.

#### Incorporate drafts before the final project submission

Provide students specific feedback to incorporate into a second draft of an assignment or project. Create ways for students to engage with the feedback and reflect on how to improve their work, for example providing a rationale for their changes in a written or video format. Consider incorporating both instructor and peer-to-peer feedback and critiques.

#### Incorporate additional requirements for a written paper

Many disciplines place a heavy emphasis on essay and research paper submissions. Consider augmenting these assignments with oral presentations, concept mapping, group work, and various ways, other than written narrative, for students to demonstrate mastery of the course objectives. Have students focus on original interpretations of raw data and images for inclusion in their assignment. Incorporate in clinical settings as drafts or case studies.

### Common AI Text, Image, and Music-Generators

* [**ChatGPT**](https://openai.com/blog/chatgpt/) is a language-based program that allows interactive conversations, answers questions, and gives detailed responses to prompts.
* [**Maker AI**](http://www.maker.ai) is a word processor designed to create blogs and websites as well as marketing copy.
* [**Copy.ai**](http://www.copy.ai) creates samples of emails, blog posts, or social media posts from criteria you provide.
* [**Midjourney**](https://www.midjourney.com/) may be used to generate images based on a prompt you provide. Examples can be found [on their website](http://www.midjourney.com/showcase).
* [**DALL-E**](https://openai.com/dall-e-2/) creates images based on prompts using natural language descriptions.
* [**GitHub Copilot**](https://github.com/features/copilot) is a system that turns natural language prompts into coding suggestions.
* [**Jukebox**](https://openai.com/blog/jukebox/)(OpenAI) and [**AudioLM**](https://google-research.github.io/seanet/audiolm/examples/)**/MusicLM** (Google, not currently open-access) are AI music generators.

### Further Reading

CET has [curated a page of articles and videos](https://cet.usc.edu/ai-text-and-image-generators-in-the-news/) concerning AI text, images, and music-generating programs.

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