

Prompt Engineering: Utilizing Generative AI Tools to Amplify Student Creativity

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Abstract : For the past two years, applications of Generative AI (GenAI) have been generating world-wide interest and concern in almost all aspects of life, including business, research, art, and, more specifically, education. Students are using GenAI tools such as ChatGPT to produce coursework. McGraw Hill, major publishing company, has reported that according to their survey, 35% of students have used Chat GPT and various chatbots to start or complete their assignments. Furthermore, as of September 2023, Tyton Partners, a consulting firm focusing on the global knowledge sector and education, reported the 22% of faculty use AI technologies in classrooms and 75% of students who already use GenAI indicate that they will continue to use it even if the use of technology is prohibited. Moreover, employers are integrating GenAI tools into their daily business activities to improve employee productivity. For example, according to Matt Abbott, Chief Enterprise Transformation Officer at Chemours, a chemistry company, has been training its employees in the use of AI tools. While many businesses, faculty and students embrace the use of GenAI tools, the many concerns associated with GenAI tools remain. These concerns include GenAI limitations, plagiarism, copy right, legal issues, to name a few. Despite these concerns, many institutions of higher education realize that the GenAI technologies and tools are here to stay and agree that one way to address these concerns is to educate the students on responsible ways to use the technology by embedding the use of GenAI tools in coursework and providing students opportunities to harvest the capabilities of GenAI tools to better prepare for their careers. For example, Dr. Markman, Vice Provost for Academic Affairs at University of Texas in Austin (UT) states that ““UT is focusing on using new tools like ChatGPT to learn and teach most effectively rather than focusing on finding students who are cheating.” The author agrees and proposes that to better prepare the workforce of the future, today’s students from all disciplines must understand the capabilities and limitations of GenAI tools and know how to use them. Engineering precise prompts, aligning prompts, and drilling down into the tool’s knowledge set are the key skills for efficient use of the tools and major requirements for GenAI savvy users of these tools. This article discusses ways to include coverage of AI and GenAI tools in the curriculum, steps to amplify the transformative power of prompt engineering, coursework to promote students’ critical thinking skills, boost their creativity, and enhance their learning experiences. In addition, this article provides an extensive guide for crafting GenAI prompts that would result in appropriate, unbiased, and hallucination-free responses.

Keywords : artificial intelligence, ChatGPT, Chatbot, education, generative AI, GenAI tools, prompts

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