

In the context of Gartner's hype cycle, what has been the trajectory of generative conversational AI? Should a format including generative conversational AI be introduced to replace traditional essay assignments in educational settings, and if so, what are some potential implications for student learning and assessment?

In the context of Gartner's hype cycle, generative conversational AI is currently at or very close to the peak of inflated expectation. With the recent release of ChatGPT in late 2022, the doors are opening for a "tremendous range of use cases for the technology including software development and testing, poetry, essays, business letters, and contracts" [1]. AI is being adopted rapidly in many different sectors from manufacturing optimization [2], to portrait mode photos on your iPhone [3], to speech analysis tools for the Los Angeles police department [4]. We are in the process of AI hysteria: organizations are heavily experimenting with AI tools, discovering as many new use cases as possible. In time, the most effective & practical of the millions of use cases will be adopted through the trough of disillusionment and the slope of enlightenment stages of Gartner's hype cycle. Despite being in the early stages of the hype cycle, generative conversational AI has been around since the creation of Eliza, a natural language processing chatbot, in 1967. More "modern" conversational AI like Siri and Google Assistant have been around since 2010. The more widespread adoption in the 2020's indicates we have exited the innovation trigger stage, which is characterized by a lack of usable products and commercial viability [5]. At the peak of the cycle, it can be observed that generative AI is growing faster than ever. This is quantified by the growth in the number of parameters in each of OpenAI's conversational AI models. GPT-1 (2018) utilized 117 million parameters, GPT-2 (2019) 1.5 billion, GPT-3 (2020) 175 billion, GPT-4 (2023) 1.76 trillion [6]. This is an average growth of 4600% from model-to-model, over just 6 years! Considering the current growth rate, discovery of applications, and level of refinement of AI products, we can observe that generative AI is at the peak of inflated expectations.

General conversational AI should not be permitted to replace traditional essays and educational assignments. Tools like ChatGPT have a place in the classroom, but can be used maliciously by students, hindering the impact of their education. Appropriate usage of AI tools for students includes the ability to "provide personalized feedback to students" [1] and usage for students to "quickly gain basic knowledge" [1] on in-class topics. These responsible usages of AI tools can act as an aid to students: allowing for convenient and quick information when a teacher is not available (for example, doing an assignment at home after school). However, students need to understand the limitations of conversational AI. ChatGPT, for example, is often described as "confidently wrong", meaning that the model will provide incorrect information with the response's tone implying it is correct [7]. Additionally, the model is unable to provide up-to-date information, tends to provide vague answers [1]. The flaws in AI can hinder students

who are looking to cheat, but can also enhance the critical thinking abilities of students looking to use it as a tool, teaching them to identify misinformation and to verify their information. Generative AI can also assist teachers by its usage as an assessment tool. As mentioned previously, the usage of AI to generate quick personalized feedback or provide basic information can remove a portion of a teacher's workload, and allow them to focus on more important tasks such as in-depth lessons, "analytical and behavioural learning" [1]. The primary concern surrounding AI tools in the classroom is malicious usage of tools like ChatGPT as a tool for plagiarism and cheating. We can analogize ChatGPT to the new-age calculator [1] to demonstrate the potential pros and cons. The calculator was a topic of controversy when it was introduced in the 1970s: its integration into the classroom would allow students to allocate more time to "problem-solving and understanding", while using the calculator for quick arithmetic. Just like the calculator, AI tools can be used to shorten menial tasks and provide more time to think critically. However, just like the calculator, the problem arises with overreliance on AI tools to "generate new ideas" [1]. Just like how the calculator caused many students to struggle with mental math skills, ChatGPT can hinder the development of decision-making skills and critical thinking [8]. Students using AI tools to accomplish their entire assignment for them are at risk of becoming reliant on AI tools for research, writing, coding, and critical thinking, just as students who never learn to do math by hand rely on calculators to do simple addition! Even for students with good intentions looking to use AI tools to give them a "starting point", AI models' lack of transparency concerning their "thinking" process can leave students without the necessary steps to reach a conclusion [8]. In all, generative AI is an unavoidable tool in the classroom due to its flexibility and versatility. There are many positive use cases for generative AI by students and teachers alike. However, the main concern is responsible usage of AI tools, as constant usage of AI tools for plagiarism and idea generation can severely hinder the critical thinking, decision-making, and communication abilities of future students.

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