

# Impact of ChatGPT & AI on University Education

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## What is ChatGPT?

ChatGPT, which stands for “Chat generative pre-trained transformer” is a language machine or a chatbot developed by the San Francisco based startup OpenAI. It was launched during the November of 2022 and has since garnered over 500 million users. It is by far the most advanced of a new generation of artificial intelligence (AI) systems that acts as an interactive chatbot. It can respond to users, produce legible texts, and can even produce images based on a coded database of online content<sup>1</sup>. As of now it is accessible to anyone with internet and its services are free.

In layman’s terms, ChatGPT is basically an interactive chatbot that answers queries in the form of concise answers. It is similar to Siri or Cortana in its most basic form such that it answers the questions, rejects the inappropriate queries etc. However, the difference lies within the functionality of the two. Siri and Cortana are virtual assistants which read out the results that they are produced with through a search engine, while ChatGPT is a language machine in itself which produces succinct answers as per the prompts and is interactive in the sense that it admits to mistakes, challenges incorrect premises etc<sup>2</sup>.

## How does it work?

The technology of ChatGPT is such that it can answer questions, write articles, summarise information using statistics, reinforcement learning and supervised learning

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<sup>1</sup> <https://yaledailynews.com/blog/2023/01/27/yale-experts-explain-chatgpt/>

<sup>2</sup> <https://www.thedailystar.net/tech-startup/news/chatgpt-everything-you-need-know-about-the-new-ai-chatbot-3213721>

to index words, phrases, and sentences<sup>3</sup>. These systems are trained by the database of information they index. As for the dataset used by the AI, those sets are highly diverse and valid, but however, due to the cesspool that is the internet, sometimes the generated results are wrong or misleading, if not both. The AI is still not apt enough to filter out the wrong information and can often give biased answers, depending on the way the prompt is presented to them.

### **Difference between ChatGPT and Search Engines**

Since comparisons are often made between the two to get a better understanding of ChatGPT, the actual differences must be highlighted. The fundamental difference between ChatGPT and search engines is that ChatGPT is designed to provide personalized, conversational responses to user queries, while search engines provide a list of relevant web pages<sup>4</sup>. ChatGPT is more focused on understanding the user's intent and generating a response that is relevant to the specific context, whereas search engines are focused on returning the most relevant web pages based on the user's search terms.

ChatGPT serves the same purpose as any other search engine, in the broader sense, but the information is presented in a much more simple form. While this is immensely helpful in making everyone's lives easier, with its potential unmatched, care and discretion must be maintained while using it.

### **ChatGPT in research and academia**

ChatGPT has the potential to have vital impact on education and academia in several ways.

Firstly, it can invariably make research remarkably simpler due to its ability to deal with big data and make it concise. ChatGPT can analyse and hence identify trends, patterns and generate insights that would otherwise take substantial amount of time in processing. It can also assist in generating research questions and hypotheses, and even assist in writing papers<sup>5</sup>.

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<sup>3</sup> <https://joshbersin.com/2023/01/understanding-chat-gpt-and-why-its-even-bigger-than-you-think/>

<sup>4</sup> <https://chat.openai.com/chat>

<sup>5</sup> <https://www.scientificamerican.com/article/how-chatgpt-can-improve-education-not-threaten-it/>

Secondly, learning and academia can become much more engaging, making it easier for both student and educators and giving more clarity in their understanding, especially in the case of difficult concepts<sup>6</sup>.

Thirdly, the design of ChatGPT makes it very functional for users with disabilities, improving their overall accessibility of education. For example, visually impaired students can use a voice-activated interface to access information and ask questions, making it easier for them to learn and engage with educational material.

Overall, with ChatGPT it is still in its very early stages. Solid, conclusive remarks cannot be made as of yet. As more research is conducted and more use cases are identified, it is likely that ChatGPT will play an increasingly significant role in transforming the way we learn and conduct research.

### **The Future of Educators in Peril?**

The very first question that most individuals would ask once introduced to the whole concept of AI and ChatGPT is: “So are these going to take my job? Replace me?” As most experts argue, the answer would be a very confident no. AI is not likely to replace teachers entirely. While AI and other similar technologies can support and improve the work done by teachers, they can in no way replace the human aspect of teaching. The emotional elements such as empathy, helping others learn creativity and develop their own personalities are things that require human touch.

Teaching involves much more than simply imparting knowledge to students. It also involves building relationships, inspiring students, providing guidance and support, and creating a positive learning environment; qualities that are yet to be replicated by AI.

However, what AI can do for the future of education is play a vital role in supporting teachers in enhancing the learning experience for students by improving the educational ecosystem. Lectures can be more interactive, virtual field trips can be arranged and collaborative projects can be done.

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<sup>6</sup> <https://www.wired.com/story/chatgpt-is-coming-for-classrooms-dont-panic/>

## **Pros vs Cons: Which one outweighs the other?**

The pros that ChatGPT present are groundbreaking and exciting with the potential magnitude of its impact massive. The fact that it can explain, program and argue with humanlike efficiency makes it a revolutionary tool, opening up a range of new avenues for students, teachers, researchers, analysts etc.

However, with any new technology, there lies the fear of the consequences that misuse of said technology would present. The obvious con that comes to mind is the whole problem of plagiarism that is undoubtedly going to become a massive issue the more users ChatGPT gets, especially in the case of academia<sup>7</sup>. This can be a problem in itself and can also spring from the issue of the mismatch in technological prowess between the more upto date students who are more likely to adapt to changing technology and the teachers who may be slower in adjusting with new things. So, it might turn out to be the case that unsuspecting teachers are presented with fully AI-generated work<sup>8</sup>. One worrisome issue for an AI like ChatGPT is the overall effect that it is going to have on the productiveness and competitiveness of students. High degree of reliance on this might deprive students from developing their analytical skills including critical thinking, problem solving etc.

## **What the future holds for ChatGPT and AI in general**

As apocalyptic as the preceding discussion might have sounded, ChatGPT is not all that intimidating as of yet. AI is unlikely to ever replace educators, managers or other normal jobs entirely. Instead, it is likely to play a supporting role, providing tools and resources to enhance the work of teachers for example and improve the learning experience for students<sup>9</sup>. ChatGPT is beneficial with the proper guidance and a well thought out plan must be made to incorporate it into the education system. The founders of OpenAI are already working on solutions to building anti-cheating, anti-plagiarism systems within its software, so that's already a step in the right direction<sup>10</sup>.

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<sup>7</sup> <https://www.thedailystar.net/opinion/views/news/what-threats-does-chatgpt-pose-academia-3239911>

<sup>8</sup> <https://www.dw.com/en/chatgpt-is-changing-education-ai-experts-say-but-how/a-64454752>

<sup>9</sup> <https://www.financialexpress.com/education-2/chatgpt-and-vr-what-does-it-mean-for-higher-education/2985714/>

<sup>10</sup> <https://www.forbes.com/sites/jasonwingard/2023/01/10/chatgpt-a-threat-to-higher-education/?sh=5343e7841e76>

In ChatGPT's own words, "Ultimately, the future of AI and language models like myself will depend on continued research, development, and innovation in the field of artificial intelligence, as well as ethical considerations about the use and impact of these technologies on society."

## References

Ahsan, S. (2023) Yale experts explain ChatGPT. Yale Daily News.

<https://yaledailynews.com/blog/2023/01/27/yale-experts-explain-chatgpt/>

Bersin, J. (2023). Understanding Chat-GPT, And Why It's Even Bigger Than You Think.

Josh Bersin, <https://joshbersin.com/2023/01/understanding-chat-gpt-and-why-its-even-bigger-than-you-think/>

Ceres, P. (2023) ChatGPT is coming for classrooms, don't panic. Wired.

<https://www.wired.com/story/chatgpt-is-coming-for-classrooms-dont-panic/>

Kulsum, M. (2023) ChatGPT: Everything you need to know about the new AI chatbot.

The Daily Star. <https://www.thedailystar.net/tech-startup/news/chatgpt-everything-you-need-know-about-the-new-ai-chatbot-3213721>

Madkaiker, N.S. (2023) ChatGPT and VR: What does it mean for higher education?

Financial Express. <https://www.financialexpress.com/education-2/chatgpt-and-vr-what-does-it-mean-for-higher-education/2985714/>

Marche, S. (2022) The college essay is dead. The Atlantic.

<https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-writing-college-student-essays/672371/>

Mondal, J. J. (2023) Why I'm not concerned about students using ChatGPT. The Daily

Star. <https://www.thedailystar.net/opinion/views/news/why-im-not-concerned-about-students-using-chatgpt-3246421>

Stock, L. (2023) ChatGPT is changing education, AI expert says - but how? Deutsche

Welle (DW). <https://www.dw.com/en/chatgpt-is-changing-education-ai-experts-say-but-how/a-64454752>

Taiyeb, F. A. (2023) What threats does ChatGPT pose to academia? The Daily Star.

<https://www.thedailystar.net/opinion/views/news/what-threats-does-chatgpt-pose-academia-3239911>

Villasenor, J. (2023) How ChatGPT can improve education, not threaten it. Scientific American. <https://www.scientificamerican.com/article/how-chatgpt-can-improve-education-not-threaten-it/>

Wingard, Dr. J. (2023) ChatGPT: A threat to Higher education? Forbes. <https://www.forbes.com/sites/jasonwingard/2023/01/10/chatgpt-a-threat-to-higher-education/?sh=5343e7841e76>