Generative AI can be the academic assistant an underserved student needs

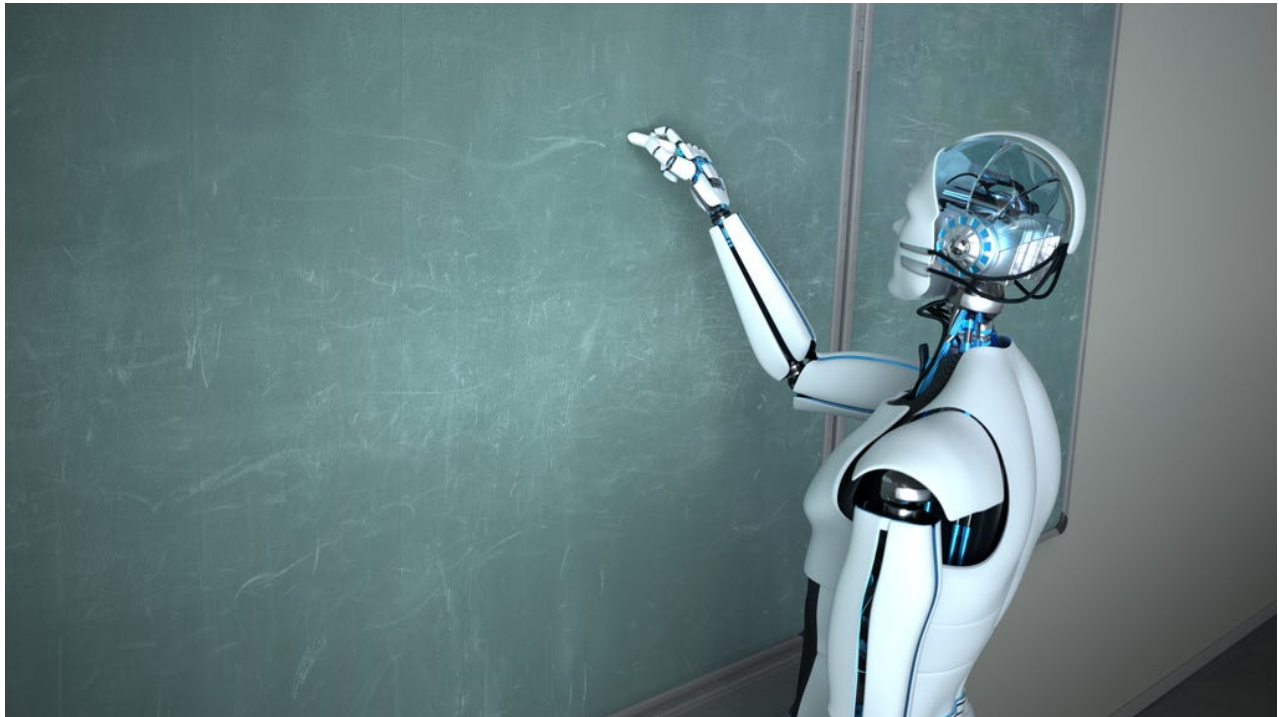 zdnet.com/article/how-generative-ai-could-help-level-the-playing-field-for-underserved-students

ChatGPT and other AI educational tools can increase accessibility and level the playing field for students of all backgrounds. ZDNET delves into the advantages and ethics.

Written by Sabrina Ortiz, Editor on Sept. 18, 2023

How to use ChatGPT to do research for papers, studies, and more

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From essay writing to standardized test prep and scores, navigating the higher education path involves complex twists and turns that can put students from lower socioeconomic backgrounds at a disadvantage. AI tools could provide meaningful aid, but ethical questions still loom.

Although tutoring services, consultants, or essay mentors could be beneficial, they often come with a steep cost, while educational advancement is a process that can be difficult for students who can't afford these extra resources.

The Rise of Generative AI

A new wave of AI tools has taken the world by storm and given us a vision for a new way of working and finding the information that can streamline our work and our lives. We show you the ways tools like ChatGPT and other generational AI software are making impacts on the world, how to harness their power, as well as potential risks.

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As a first-generation applicant, I had minimal family guidance when looking at schools and programs or when filling out applications. When applying for college, I noticed this familiar pattern negatively impacting me and many other students in a lower economic bracket. These disadvantages also influenced college enrollment.

A Brookings Institute report found that 89% of students from well-off families go to college, 64% of students from middle-class families, and only 51% of students from low-income families.

AI, however, has the unexpected possibility to level out the playing field. ChatGPT, for example, is a free, all-encompassing resource able to chat in real-time to answer all my questions. Other educational tools also incorporate generative AI to advance students' education.

Answer your questions in conversations

If I searched for the next SAT test date, I'd spend roughly five minutes sifting through articles, choosing one, and navigating its contents to retrieve the simple answer.

Meanwhile, internet-connected AI chatbots like ChatGPT or Bing Chat conduct the scanning process for the user, providing an automatically straightforward answer plus additional resources.

As ZDNET previously reported, a study that compared Google's responses to those of ChatGPT found that ChatGPT's outputs outperformed Google's responses in both intermediate and advanced questions in both thoughtfulness and context.

Also: ChatGPT or Google: Which gives the best answers?

"The internet has been transformative for particularly adept, self-driven learners, who can become experts in many areas of human knowledge by judicious, directed consumption," Tom Lippincott, director of digital humanities and assistant research professor at John Hopkins University, tells ZDNET.

"But that process is itself a major challenge, not everyone learns the same way or has the time to find, curate, and digest what they need."

The natural language processing (NLP) capabilities AI chatbot possess makes the system more capable of understanding questions and able to answer in a conversational manner.

The personal statement

The personal statement is arguably one of the most important components of a college application, meant to showcase both the student's writing skills and personality beyond GPA and test scores.

Usually, the personal statement is the first of many supplemental essays, each unique to every school, ultra-specific in the prompt, and also weighs heavily on the applicant's portfolio. For the top 250 colleges, these essays generally account for 25% of their overall application, according to CollegeVine.

Due to time and importance, many students seek costly outside services. A Google search of "college essay assistance" revealed an oversaturation of services. One such service, PrepMaven, costs $79 to $349 per hour, with a minimum $510 package. With a PrepMaven subscription, students are entitled to an initial consultation and multiple essay revision cycles, according to the website.

Conversely, ChatGPT and other AI writing assistants have the ability to provide the same ideation services and grammar-specific essay guidance -- for free.

Homework help

Outside of the application process itself, AI tools can also further academics once you've committed to a classroom, whether it be grasping new material, sourcing a specific concept, or summarizing a complex reading.

Sierra President, a sophomore at the University of North Carolina at Chapel Hill, has previously written about the ethics of college students using ChatGPT. She says to ZDNET, "I think that there are aspects of AI chatbots that can be helpful to students, such as in cases of gaining quick information on things like paper planning and studying help."

Additionally, AI chatbots can aid in actual learning, including, writing, studying, math, coding, advice, research, and more.

Tutoring services

For students who can't rely on their parent(s) as an academic assistant for homework and assignments, chatbots also have the potential to serve as a 24/7, live tutor.

A 2021 SWNS digital survey asked 2,000 American parents with school-aged children about their ability to help their children with homework and 56% of parents said they feel helpless helping their kids with homework. Moreover, two-thirds of the parents surveyed said they would turn to Google to try to find ways to help.

Now, even parents can take advantage of tools like ChatGPT for a more efficient, thorough medium for solving even the trickiest homework answers. Similarly, students of all ages could use AI's efficient answers as a tool to better grasp the material.

Also: 5 ways ChatGPT can make parenting easier this summer

"Anyone who has become proficient in a complex domain of human knowledge can probably remember how important it was to hear the same idea presented in several different ways to make it 'click': the ability of these models to rephrase, simplify, and interactively explain is perfect for this," says Lippincott.

An AI chatbot allows all students with an internet connection, regardless of background, access to a powerful and mostly accurate learning tool.

Other educational tools that employ generative AI

Aside from AI chatbots, generative AI could play an integral role in other learning platforms, which could improve students' learning and education accessibility. Even prior to the AI chatbot "boom," many free education tools leveraged AI to develop helpful and educational content.

Quizlet, a free learning platform, provides users with free study sets and virtual custom-made flashcards, as well as millions of study sets previously created by other Quizlet users.

Over six years ago, Quizlet implemented AI to introduce its "Learn" mode and generated features such as "example sentences" for vocabulary learning and multiple-choice questions.

Then in 2020, it partnered with OpenAI (before its claim to fame ChatGPT) as part of the beta for GPT-3. More recently, Quizlet's adaptive AI tutor called Q-chat, powered by OpenAI's ChatGPT API, is available in beta for free. The tool also has premium features for $39.99 annually.

Quizlet CEO Lex Bayer cited a study that found the outcomes of one-to-one tutoring can be as much as two standard deviations better than those of classroom instruction. He tells ZDNET that although tutoring is the best way for students to learn, it's expensive and hard to scale.

"But now with these amazing technologies that have come through large language models, we can make this a reality for students."

Similarly, the popular language learning platform Duolingo embraced AI before the technology's rise to popularity, allowing users to learn 40+ languages with fun exercises.

Duolingo's AI works with human experts to create and personalize the user's curriculum and recently employed GPT-4 to create more lessons, extend content length, and provide better suggestions.

Duolingo

Duolingo is free, and users are able to learn a new language at their own pace while bypassing expensive tutors or group classes. This access provides equal opportunities to students who might not otherwise have it, Bozena Pajak, Duolingo's VP of learning and curriculum, tells ZDNET.

In the US, Duolingo's GPT-4 integration helps students learning English as a second language develop and sharpen their verbal and writing skills. Pajak says "teaching people English, that's something that we know just helps improve people's prospects," adding that the company has been focusing on English.

In March, the company announced Duolingo Max with AI-powered, tutor-like "roleplay" and "explain my answer" features for $168 annually or $30 a month.

The ethics surrounding AI in education

Whenever AI is discussed in the educational field, there's apprehension regarding how it could negatively affect learning in students, including cheating and the spread of misinformation.

Because the new technology raises so many questions, it's helpful to look back at history. When the printing press, calculator, or even the internet, were first developed and popularized, the public had a similar reaction: fear.

Misinformation

While obtaining a "generative AI education" so to speak, students need to be aware that AI chatbots have been guilty of outputting misinformation.

Trained on vast amounts of data, generative AI models use vast amounts of pre-existing content to then create new outputs like text and images. Since the chatbot makes inferences on data it's trained on to understand what you are saying, and how to respond to it, there might be a disconnect, which causes incorrect outputs.

These false outputs are referred to as hallucinations, which often result in plausible but incorrect answers. In turn, that output can spread misinformation and make it easy for someone to misinterpret as misinterpret incorrectly as truth.

However, having just been a student myself, I think that if students are warned about misinformation, they can be careful about taking AI chatbot output as a fact.

"In general, I would say treat it as a conversation with an unreliable but knowledgeable person: identify factual claims that can be checked directly, try to have a clear goal in mind that you can evaluate in itself, and ask the model how it arrived at it until you're satisfied," says Lippincott.

AI educational policies not yet set

Although AI has the potential to revolutionize how students complete their work, schools have not set clear guidelines for proper usage.

In fact, some of the biggest public school districts in the country including New York City, Seattle, and Los Angeles have blocked access to ChatGPT on school networks and devices. Though some districts like New York City have lifted the block, AI policies still remain vague or too restrictive.

President emphasized this as a concern for schools using AI platforms, which causes "students to not understand what they can use and to what extent."

Standards and structures in the classroom regarding generative AI could help students take appropriate advantage of nuanced tech without compromising work integrity or "cheating" against peers who don't use AI.

Unfair advantage and cheating

As a student, President also adds that she feels AI gave students who used the technology an unfair advantage over those who opted to do work without AI assistance.

A possible workaround for this issue is for teachers to create assignments and testing where students' critical thinking is challenged as that is something AI models (tools) are not yet capable of doing.

Even if AI is a tool used in these types of "critical thinking"-based assignments, it won't be a sure way to an "A" as what's really being tested is higher level synthesis and application rather than data or information output.

Lippincott says the most immediate concerns to education are "misinformation and cheating."

"We want students to come away with a better understanding of the world, which is undermined by models generating falsehoods -- and we want to be able to endorse students' achievements, which is undermined by models doing the work for them," he says.

A solution to prevent cheating is to keep AI as simply a learning tool.

"The cheating aspect is a bit more immediate and actionable: I don't see any way around needing to have careful, controlled evaluations where students have to demonstrate their understanding in class," says Lippincott.

In addition to being a hot topic now, AI has the potential to play a bigger role in our future. With its rapid popularity, Bayer notes the power of preparing students with a greater understanding of these tools, their limitations, as well as how and when to use them.

Since the launch of ChatGPT, AI has grown tremendously with no sign of slowing down. According to a study from Grandview Research, AI is expected to have an annual growth of 37.3% between 2023 and 2030.

As a recent first-generation graduate, AI would have been an invaluable tool in both my application process and studies. I hope that students of all socioeconomic backgrounds will look into AI's one-to-one tutoring aspects, language learning assistance, ideation, and more.
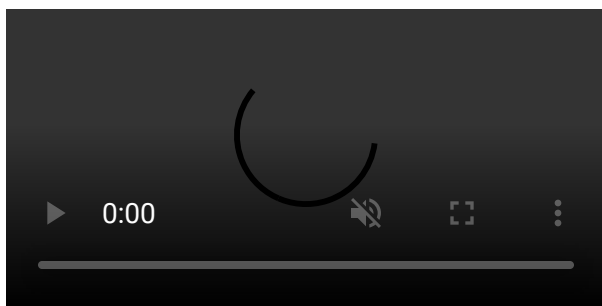
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