Chat GPT – A Technological Remedy or Challenge for Education System

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ARTICLE HISTORY

ABSTRACT

Purpose: A brand-new AI chatbot named Chat-GPT is now making the revolution in various fields which were led by humans, and this is because it allows for human-like chats and even writes essays for you and many more, the Chatbot may have an impact on education. Is it advantageous or harmful to the educational system? It is the teachers' first priority, right? Teachers' English assignments submitted to Chat-GPT produced results that were better than those of many of their pupils. Everything from cover letters to summaries of a well-known literary work can be produced via Chat-GPT. The educational system could be severely disrupted, and the institutions could incur costs. The recent rapid use of AI has astounded several industries, including education. The goal of this paper is to address the main problem of the educational system, i.e., Can Chat-GPT be Used as a tool for Teaching and Learning? However, we now need to understand how to use technology responsibly.

Design/Methodology/Approach: This paper is conceptual in nature and to have a deep understanding of the use of Chat-GPT in the education system we have used secondary data by doing extensive literature review.

Findings: The findings of this article recommends that though Chat GPT is still in the formative stages of its development, it can be used as a tool for Teaching and Learning. However, both teachers and students need to learn how to use this technology responsibly.

Originality/Value: Real power carries a great deal of responsibility, and Open-AI has a lot of it. The Dall-E 2, GPT-3, and now Chat-GPT models were first introduced by Open-AI, one of the first AI companies to have a substantial impact on society. Chatbots may have an impact on education. The paper discusses both the merits and limitations of Chat GPT in the education sector and finally it recommends the use of Chat GPT in the education sector.

Paper Type: View point

KEYWORDS: Chat GPT | Open-AI | Artificial Intelligence | Reinforcement Learning | Generative Pre-trained Transformer | Education | Teachers, Students

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Introduction

Conversational bots are getting more and more popular, and tech giants like IBM, Facebook, Google, and other top companies are helping to make this happen. They can be called chatbots, virtual assistants, conversational interfaces, or automated chat. They are very important to any business. They give your websites new vitality. They start to connect with your online sessions audience, make their experience better, and, most importantly, help you collect data about your website visitors and turn them into customers. There are many reasons to use a chatbot.

Education chatbots are conversational bots that are used by EdTech companies, colleges, and other educational institutions. They are only made for use in the education field. They help with updating the curriculum, grading papers, collecting data on students and alumni, and coordinating the admissions process.

When it comes to technology, the education field has always been ahead of the curve. But this only worked for some parts of distance learning. The pandemic really forced the education industry to change the way it taught, and the changes made to distance learning as a result changed the game completely. Online sessions education is no longer limited to online sessions certification courses on sites like Coursera and Udemy. It is now part of the regular schooling system. Universities have a lot to offer, like online sessions flagship courses and distance learning programs. With Edtech companies at their core, chatbots have given online sessions education a new form and made life easier for students, professors, and even the administration.

In November of 2022, Open AI released a tool called Chat GPT that uses AI. It is a chatbot that uses artificial intelligence and has a feature that lets you talk to it in a conversational way, i.e. All of your questions are answered, mistakes are fixed, questions are answered, and wrong requests are turned down. This AI technology can also write things like blogs and essays for you. It is possible that chat GPT will play a big part in education. Cons of using the AI tool include that it can't understand context, read tone and emotions, deal with complex topics, or make personalized lesson plans. It could also make students too dependent on technology. Experts say that it can make it harder for the student to solve their own problems. Teachers might be worried about Chat GPT because it would take away all chances to be creative. But experts say that students don't have to worry as much because they don't have to take the test online sessions. Instead, they have to find the answers in the textbook.

Can we use this Chat GPT as a tool for teaching and learning? is the big question this paper sets out to address for the educational system. Theoretically we understood what chat GPT is? But we need to understand a bit about the technical in and outs of this AI driven chatbot i.e. how Chat GPT works, what are the associated algorithms and many more, the same are briefly discussed in the subsequent section.

Technically Understanding Chat-GPT (Generative Pre-trained Transformer)

Open-AI is a research company which was started in 2015 by Sam Altman, Elon Musk, Greg Brockman, Ilya Sutskever, and Wojciech Zaremba in San Francisco. Chat GPT is a part of Open-AI. Chat GPT (Generative Pre-trained Transformer) is a generative language model, which is based on the transformer architecture. This model has been built to handle transformations and attention to process sequences of items, such as words in a sentence. This architecture is particularly efficient at handling natural language processing tasks.

Generative Pre-training Transformer-GPT, or Chat GPT, a generative language model which is based on the "transformer" architecture. These models can handle a lot of text and learn to do tasks that involve natural language processing very well. In particular, the GPT-3 model has 175 billion parameters, which makes it the biggest language model ever trained. GPT needs to be "trained" on a lot of text before it can work. For example, the GPT-3 model was trained on a set of text that had more than 10 billion words and more than 8 million documents. From this text, the model learns how to process natural language and write well-structured text. Reinforcement learning, which is based on human feedback, is used to train this model. In the end, by fine tuning under supervision. The people training the AI had conversations where they were both the user and the AI assistant. There were also written suggestions given to the coaches to help them write their proposals. So, they combined this new dataset with the Instruct GPT dataset, which had been turned into a dialogue format. Once the model has been well trained, GPT can be used to do a wide range of tasks.

However, to the develop the reward model used for reinforcement learning, the gathering of data for comparison was the very first thing that had to be done. This included at least two model responses and a quality ranking for each of them. Therefore, in order to obtain the data, some of the talks that the trainers had with Chat GPT are required and based on the selected conversations at random, a variety of conclusions are derived for the coaches to rate. Thereafter in-order to work with the variety of conclusions are derived for the coaches to rate proximal policy optimization would be possible (PPO) is used. Additionally, a supercomputer running on the Microsoft Azure platform was used for the trainings.

In conclusion, the model has to receive text input in order to be used with GPT in a chat. This could be a query or a phrase that provides additional context. And using this knowledge, GPT responds in a manner that makes sense. In fact, a chatbot or any other software that has to create a text based on what the user says can use this response.

We had understanding of what "pre-trained" meant in the Generative Pre-trained Transformer model. Let's quickly talk about what it means for Chat GPT to be based on transformers.

A series of items, such as words in a sentence or letters in a word, can undergo a "transformation," which is a form of data processing. And "transformers" are machine learning models designed to perform transformations on sequences of elements.

The transformers' design is based on a technique called "attention," which lets the model focus on different parts of the input sequence at different times while it is processing the sequence. This makes it easier for the transformers to process information and do their jobs of processing the natural language more accurately.

Power of Chat GPT in Education- Classroom/online sessions

AI could change education by making it more personalized and letting students learn at their own pace. As a teacher, Chat GPT can be seen as a new way to get young students interested and give them new challenges. Chat GPT, which stands for "Generative Pre-trained Transformer," is a tool for processing natural language that can be used in many ways to help students learn better in the classroom/online sessions.

We understood that Chat GPT is a programme that makes use of AI to generate text that sounds natural given certain conditions. It's like having a personal writing assistant, but instead of just correcting your spelling and punctuation, it can think out complete sentences and paragraphs for you. After going over some tedious but important aspects, let's move on to some interesting ways we may use Chat GPT in the classroom/online sessions.

To begin with some of the Usecases for the delivery of English lessons in the class rooms are given thought of, however it's the creativity of the teacher to develop and exercise many more.

- Improve vocabulary: Use Chat GPT to make custom word lists for your students. Just type in a list of words, and the tool will come up with sentences that use those words and help students understand what they mean.
- Tons of writing ideas: need a new way to teach writing? You can use Chat GPT to get ideas for writing based on a certain theme. Just type in the theme, and the tool will come up with a bunch of prompts that go with it. This is a great way to get your students to practise writing and think creatively.
- Story - telling or Narration: Use Chat GPT to help your students get better at telling stories. When you type in the beginning of a story, the tool will suggest possible next steps. This lets students continue the story in their own words.
- Reading and Comprehension: It's easy to understand what you're reading because Chat GPT can make questions for you based on a passage you give it. Just type in the passage, and the tool will come up with a set of questions that will help students understand and remember what they have read.
- Language Translation: Chat GPT is a great tool for students to translate texts from one language to another, which helps them understand and communicate better. Chat GPT is a reliable and accurate translation tool. They can use it to read a story in Spanish or write a letter to a pen pal in French. It's like having a personal translator, but you don't have to pay for or deal with one.

It's not always easy to maintain your learners' interest and enthusiasm in mathematics.

There is nothing to worry, using chat GPT is another way to engage students and keep them on their toes in the classroom/online sessions. Some suggestions for using Chat GPT into the math classes:

- Practice Problems: Is there a need for your learners to get extra practice outside of class? Try some of the practice problems! Sure, no sweat! They can always find new arithmetic problems to solve in Chat GPT's archive.
- Clarifications: Do you have a student that just can't seem to grasp any particular concept? Don't worry, just tell them to ask chat GPT for a detailed breakdown. It will be like having an instantaneous online sessions math teacher at their disposal.
- Quizzes: Seeking a lively and engaging method of review? Put together a personalized quiz using the chat feature of GPT.
- Engaging Lectures & Classes: Create engaging lectures & classes with Chat GPT. The chatbot may, for instance, pose questions to which the students would respond. Involving them in the process can be a terrific approach to keep pupils interested in what they're learning.
- Collaborative learning in mathematics through the generation of math problems and questions for use in small groups during class time using Chat GPT is quite promising. One of the benefits of doing so is that it can encourage teamwork and the ability to solve problems creatively.

- Tailored Lessons: In a classroom/online sessions with students of differing abilities, the chatbot can be used to tailor lessons to each individual's needs through differentiated instruction. For advanced pupils, the chatbot can generate more difficult issues, while those who need more help can receive simpler challenges.

- Gamified Education: Create math-related games or challenges with your learners using the gamification features of Chat GPT. A group of pupils could compete against the clock as the chatbot generates a sequence of math problems. This type of activity can be a lively and interesting method of learning and competition review.

Clearly, Chat GPT is a wonderful and flexible resource that can be utilised in a multitude of ways to enrich education, even for the youngest of students. If you think it could help your classroom/online sessions, why not give it a shot? In a professional capacity, teachers can attest that it is a useful resource for generating quick ideas for classroom/online sessions activities. Everyone here can relate, right?.

When considering how to implement Chat GPT in the classroom/online sessions, teaching students the appropriate ways to utilize the software is perhaps the single most important item to keep in mind. It is essential that we instruct students on how to make use of AI technology as it continues to improve and becomes more applicable in educational settings. Include in the curriculum classes that will assess and discuss the outcomes of the Chat GPT.

Limitations of Chat GPT

Chat GPT is still in its early stages, but it seems like it could be useful in the future. Unlike AI companions like Siri and Alexa, Chat GPT does not search the internet for answers. Instead, it builds a sentence word by word, choosing the "token" that is most likely to come next based on what it has learned from its past experiences. In other words, Chat GPT figures out the answer after making some reasonable assumptions. This is one reason why it can justify wrong answers as if they were correct.

There have been numerous occasions in which chat GPT has provided incorrect and even potentially hazardous responses to the questions that were asked. It is difficult to keep up with open-ended language models like chat GPT because it is difficult to predict what will occur next. This makes it tricky to stay up with the discussion. Chat GPT is unable to do elementary mathematical operations or provide answers to queries requiring elementary reasoning, and it will even attempt to defend facts that are entirely incorrect. People who are active on social media platforms are able to explain that Chat GPT isn't always accurate.

Chat GPT was also trained on the writing of people from all over the world, both in the past and the present. This means that the model can have the same kinds of biases as the data. The data are not the only thing to blame. The data used to train Chat GPT is chosen by Open-AI researchers and developers. Open-AI is asking users to give feedback on wrong outputs to help fix what it calls "biased behavior." People could be hurt by Chat GPT, so it could be argued that it shouldn't have been made public until these problems have been studied and fixed.

In September 2022, a similar AI chatbot called Sparrow was released. Sparrow is owned by Alphabet, which is the parent company of Google. But it was kept out of sight because of the same fears that it could hurt people.

Meta might have also needed to hear the warning. When it put out Galactica, an AI language model that had been trained on academic papers, it was quickly taken back because many people said it gave wrong and biased results.

Result and Discussion:

We can see that businesses in the education sector are getting nervous about the difficulty in distinguishing between authentic and synthetic information produced by AI-driven chatbots like Chat GPT. If more fake knowledge was freely available in the academic world, it may drive down prices and spoil the quality of education. The next group of occupations that may be at risk are white-collar positions because of the likelihood that fewer people would be needed in many industries as AI improves.

Companies just starting out can make use of these large AI models and modify them to meet their specific requirements in fields like medicine, law, etc. In an interview, Sam Altman, CEO of OPEN AI systems, predicted that only a handful of organizations would be responsible for training and managing the massive Ai system-based models. To grasp what is happening in the world and why, the same AI that can answer 98% of any query also possesses general knowledge and can give reasons for the same. New enterprises will build upon this foundation to strengthen their position in their respective markets. With some tweaks to the foundation, they might eventually become industry leaders.

No matter how fascinating the Chat GPT initially seems, users will quickly realize that it is still in its infancy. It is crucial for students to have someone watching over them as they learn, thus human and machine responsibilities complement one another.

So, to sum up, Chat GPT is limited, gets things wrong, and can't be used on a large scale right now. However, it is clear that it is a glimpse of the future. It has shown signs that it could become a multibillion-dollar business. If Microsoft, the biggest funder of the project, finds a way to scale the system and add it to the Bing search browser, it might not be a good sign for Google.

But AI based chatbots like Chat GPT could be used by students to cheat, so it's important for teachers to be aware of this and take steps to stop it, and to take measures to prevent it from happening in their classroom/online sessionss, some suggestions are given below:

1. One strategy for achieving this goal is to implement forms of evaluation that are not susceptible to being gamed easily, such as open-ended questions or projects that call for one's own unique perspective and originality.

2. In order for teachers to verify student work for instances of copied material, these teachers can employ technologies like software that detects plagiarism.

3. Instructors could conduct viva-voce sessions as part of the grading of students' assignments; doing so will make it easier to determine how creatively students have approached their tasks.

4. It is essential for educators to educate their learners about the appropriate and ethical use of artificial intelligence (AI), in addition to avoiding cheating, which is another crucial responsibility of educators. This can include a discussion about the potential dangers and repercussions of utilizing AI to cheat, in addition to the significance of maintaining honesty and integrity in one's academic work.

5. In the end, it is essential for educators to have an up-to-date knowledge of the most recent technological advancements, such as AI, and to be proactive in addressing any potential problems that may occur in the classroom/online sessions. Because of this, it may be necessary for educators to look for chances for professional development or to work together with those who are more knowledgeable about AI.

Conclusion

When the advantages of the Chat GPT are weighed against its drawbacks, it becomes clear that the Chat GPT, however how promising it may appear at first glance, is still in the formative stages of its development. Since the central component for learning is some form of directed or supervised instruction for the learners, the roles of humans and AI based chatbots like Chat GPT must coexist. It is crucial for students to have someone watching over them as they learn, thus human and machine responsibilities complement one another. The findings of this article recommends that Chat GPT can be used as a tool for Teaching and Learning. However, both teachers and students need to learn how to use this technology responsibly.

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Reviewers Memorandum

Reviewer's Comment 1: Chat-GPT is now making the revolution in various fields its abilities are quite remarkable. Use of chat-GPT in various field has immense scope for research.This paper talk about the impact of Chat-GPT on education sector. This theme is quite apt in current scenario.

Reviewer's Comment 2: The paper discusses about the advantages and limitation on the use of Chat GPT in education system. It also talks about the scope of this Chat –GPT in education system and the way it can bring reform in education system.

Reviewer's Comment 3: Education chatbots are conversational bots that are used by EduTech companies, colleges, and other educational institutions. AI could change education by making it more personalized and letting students learn at their own pace. As a teacher, Chat GPT can be seen as a new way to get young students interested and give them new challenges. Author has also highlighted the limitation of Chat GPT in education sector like it can justify wrong answer as if they were correct.

Citation

Editorial Excerpt

The article has 03% of plagiarism which is the accepted percentage as per the norms and standards of the journal for publication. As per the editorial board's observations and blind reviewers' remarks the paper had some minor revisions which were communicated on a timely basis to the authors (Sudhansh Sharma and Ramesh Yadav), and accordingly, all the corrections had been incorporated as and when directed and required to do so. The comments related to this manuscript are noticeably related to the theme "**Chat GPT – A Technological Remedy or Challenge for Education System**" both subject-wise and research-wise.Chat GPT is still in the formative stages of its development but the author has very much accurately mentioned advantages and limitation of Chat GPT in education system. It can be concluded from the paper that advantages of Chat GPT is weighted more against its drawbacks so it seems to be quite promising in education sector. Overall, the paper promises to provide a strong base for further studies in the area. After comprehensive reviews and the editorial board's remarks, the manuscript has been categorized and decided to publish under "**View Point**" category

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