



EXPLORING THE EDUCATIONAL POTENTIAL OF CHATGPT

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Abstract

In this era of technology, information is available at the fingertips. The development of Artificial Intelligence has become a milestone in the field of technology. The introduction of ChatGPT works as a catalyst in the field of educational technology. This transformation demands a different set of skills. In order to get content from ChatGPT user follows certain steps. ChatGPT is available in both free as well as paid versions. The paid version has some distinctive features which are not available in the free version. ChatGPT can be utilized in education to build chatbots and virtual language instructors, writing assistance, Personalized learning, Increased accessibility, Expansion of knowledge, better lesson planning, Personalized feedback, Improved communication, Enhanced professional development, Innovative teaching methods, Automated grading, Improved assessment accuracy, and many more. No doubt there are some risks and threats also associated with ChatGPT like Lack of comprehension of the context, Difficulty in assessing the quality of responses, Lack of higher-order thinking skills, threatening academic integrity, Deterioration of high-order cognitive ability, etc.

Keywords: Technology, Artificial Intelligence, ChatGPT, Application, Teachers, Students, Teaching, Learning.

1. Introduction

In this era of technology, information is available at the fingertips. The availability of high-speed computer processors and good internet connectivity made these possible. The development of Artificial intelligence has become a milestone in the field of technology. Its influence is seen in all aspects of human life. The education field has also seen rapid transformation due to the emergence of ChatGPT. The process of teaching and learning has drastically changed from traditional classrooms to virtual classrooms. This transformation

demanded a different set of skills than earlier. Both teachers and students will be required to demonstrate more critical thinking skills when assessing data and presenting novel concepts. Further, the development of ChatGPT has increased the pace of technological interaction of various aspects of human life with technology.

2. GPT Technology

The term “ChatGPT” is an amalgamation of two words, “Chat” and “GPT”. Chat refers to the chatbot functionality and “GPT” stands for Generative Pre-trained Transformer. It is an extensive language model developed through OpenAI. It was launched on the 30th of November 2022 and obtained popularity for its thorough and intelligent replies. It became the fastest-growing consumer software application by January 2023.

ChatGPT is a large-size computer model that has been given the official name GPT-3.5. It understands and responds the human language. It contains a lot of text data, which includes written information on various topics, messages, blog posts, social media posts, the content of websites, stories, etc. The main purpose of GPT 3.5 is to communicate and assist humans in language. It helps to answer questions, offer advice, tell stories, and provide other types of information. It is trained with GPT features to understand one’s inquiry and respond in a better manner. However, it is worth noting that GPT is a computer model and therefore it can sometimes make mistakes or not fully understand the query. Therefore, for expertise on particular subjects, it is important to verify information from other sources and experts in the subjects.

ChatGPT has the capability to influence educational activities. It revolutionizes educational settings by providing facilities for searching for information, universal access, personalized learning experience, improving language and writing skills, enquiring about any topics, answering specific questions, open conversation and discussion, reports and essays writing, etc. However, it is noteworthy that GPT can be used as support in the learning process. It does not provide the potential to replace human teachers.

The current version of the ChatGPT application is based on the 3.5 model which answers an inquiry about general knowledge, literature, psychology, social issues, etc. OpenAI is also working on higher-level GPT-4 for its upcoming version. The new version is expected to better understanding of content, and better understanding of user preferences. GPT is expected to be continuously updated and improved for better and easier support of users’ needs.

In order to get content in the search box of ChatGPT users can follow the elementary steps.

1. Use related words: To find the content related to a particular topic or subject users can use the words related to it.
2. Use complete sentences: If the users have a complete sentence about a particular question, topic, or problem type that sentence directly in the search box. It may produce more contextual results.
3. Use a phrase: If the users have knowledge of only part of the content, he/she can use a phrase in the search box. It can provide suitable content important to the search.

4. Use search filter: ChatGPT offers access to search filters. Users can search, modify and find the content using a filter such as by date, by author, by subject, etc.

It is important to note that the ChatGPT search will depend on the contextuality of the question asked. If the question is relevant the result produced by it has potential.

3. Difference between the Free and Paid version of ChatGPT

The main differences between the free and paid versions of ChatGPT are:

1. User Availability: The free version is publicly open for all, while the paid version is accessible to a limited number of users with payment of charges.
2. User Experience: In the free version of ChatGPT, users have the facility to browse and get answers to common questions while in the paid version users get more advanced and personalized answers.
3. Features and Highlights: In the paid version users get features like updated content, priority support, and permission to use official APIs. It gives users more advanced usage features and solutions.
4. User Constraints: In the free version, users get a limited amount of API calls, while paid users are allowed more API calls.

An API call is a feature through which one software application sends and receives data from another application based on a specific URL server.

4. ChatGPT in Educations

ChatGPT language model of AI can be used in education in several ways:

4.1. ChatGPT and Changes in Learning

- a) **Language Instructions:** Virtual language instructors and chatbots may be developed via ChatGPT. It helps students to practice and improve their language skills. Chatbot simulates conversation in real life and gives immediate feedback to the students on their language practice skills like grammar, pronunciation, and Vocabulary. It enables students to interact and practice speaking and listening in a natural way.
- b) **Writing assistance:** ChatGPT can be used by students to improve writing skills. It analyses student writing styles and suggests improvement is needed. Additionally, it offers corrections regarding spelling, syntactic, and grammatical mistakes.
- c) **Personalized learning:** Students can benefit from a personalized learning experience using ChatGPT. It analyses the student learning patterns and preferences and recommends specific learning materials, like articles, textbooks, and videos, that cater to their needs. It helps students to learn more in an effective and efficient manner.
- d) **Increased accessibility:** ChatGPT-based tools are very helpful for disabled students. It creates accessible learning material to support students with impairments in conversation such as text-to-speech and speech-to-text conversion, translation, and audio description.

- e) **Advancement of knowledge:** ChatGPT generates a variety of information and content that may be utilized to increase knowledge. It enables them to investigate novel subjects, and topics and also identify new areas of interest.

4.2. ChatGPT and Change in Teaching

ChatGPT technology not only brings changes in learning pattern but also influence teaching styles. Some important influences on teaching are:

- a) **Better lesson planning:** The ChatGPT technology makes it simple and better to create lesson plans and other teaching resources based on specific objectives. It enables educators to design curricula more quickly and with less effort.
- b) **Individualized feedback:** Individualised feedback on student work may be obtained using ChatGPT. It enables instructors to concentrate on higher-level abilities like critical thinking and problem-solving, rather than focusing on more basic abilities like grammar and syntax.
- c) **Enhancing communication:** ChatGPT can help students and teachers communicate more effectively. Additionally, it makes it easier for parents, administrators, and politicians to communicate with one another in educational settings.
- d) **Increase professional development:** Teachers may create resources for their professional development using ChatGPT. Additionally, it offers teachers an opportunity to access high-quality resources. and enables them to develop faculty at their own speed and according to their own schedule.
- e) **Innovative teaching strategies:** To improve student engagement and learning results virtual assistants, chatbots, and interactive simulations are just a few innovative methods of instruction techniques that may be created using ChatGPT.

4.3. ChatGPT and Change in Assessment

ChatGPT technology also brings significant changes in the method of assessment or knowledge testing. Some important changes are:

- a) **Automated grading:** ChatGPT assists in instantly grading papers and other written projects. It can help teachers save an enormous amount of time and provide students with feedback on their work immediately.
- b) **Improved assessment accuracy:** ChatGPT assists in producing more objective, accurate, and precise results. In contrast to human graders, it is not subject to bias or subjectivity.
- c) **Flexible Assessment:** ChatGPT testing has the characteristics of flexible and adaptive tests. It adjusts the difficulty level of the test according to the level of students. It makes it possible to test knowledge and abilities more precisely and effectively.
- d) **Immediate feedback:** Students taking tests can receive immediate feedback through ChatGPT which helps them to identify and fix mistakes in their work or tasks.

- e) **Alternative evaluation techniques:** Alternative evaluation techniques, such as chatbots or interactive simulations, can be developed using ChatGPT that provide students with a more interesting, accurate, and realistic evaluation experience.

While ChatGPT technology has the potential to drastically change how people learn, how teachers teach, and how assessments are done, it also has several significant drawbacks, like the possibility of prejudice, the accuracy of the response, moral dilemmas, etc. Appropriate training and monitoring can help to ensure the effective, and efficient use of ChatGPT in educational settings. Training of students can help them to effectively use it. Proper training and support can help teachers successfully incorporate ChatGPT into their process of instruction and evaluation.

5. ChatGPT, Change the Paradigm of Education

The paradigm of education might be completely changed with ChatGPT technology. It individualized the learning experiences of students by developing content and making assessments considering the student's needs and abilities. It helps to save time for teachers from various administrative work and focus on student learning. This brings efficiency to educational settings. It helps disabled, marginalized, and remote areas students access high-quality resource material. It allows flexibility for the student to earn at their own pace. Moreover, it facilitates the creation of novel and creative techniques like chatbots, virtual assistants, and interactive simulations.

While referencing ChatGPT as a source of information, it is noteworthy that information generated by it is seen as a computer-generated answer rather than an original source of knowledge. To reference Chat GPT, the researcher may include the name of the platform, such as "Chat GPT," along with the date of the conversation or the date that the information was generated. Additionally, the research provides the facts that Chat GPT is an artificial intelligence language developed using an Open AI model.

6. Limitation of ChatGPT in education

Despite the several advantages of ChatGPT in education, it has various limitations also. Some potential limitations of ChatGPT are mentioned here:

- a) **Lack of Comprehension:** ChatGPT recognizes the pattern and generates possible responses to an inquiry. It does not have a deep understanding and conceptual clarity. The result generated from it may lack depth and insight. It may be unable to perform the task that requires a deep understanding of a particular knowledge domain. As long as there is only needed meaningful content, without superficial understandings this weakness is not a problem.
- b) **Challenges in assessing the quality responses:** ChatGPT lacks the human intuition needed to assess the authenticity and reliability of generated information. It only assesses the well-defined information. ChatGPT have limited access to the knowledge and events in the world after 2021. Knowledge continues to evolve, but it produces an outdated and inaccurate response.

- c) **Prejudice and discrimination:** The problem of prejudice and discrimination perpetuates even in ChatGPT. This might happen because of the biases in training data, algorithmic design, and societal context. ChatGPT simply works on the principles of Garbage in and garbage out. Because its training data was overwhelmingly composed of male resumes, Amazon decided to stop using its AI recruitment tool in 2018. This was done after realizing it was biased towards women. AI algorithms neglect the process of reinforcement and only focus on profit and efficiency.
- d) **Lack of cognitive abilities:** Even though ChatGPT can help students achieve complicated learning objectives, it lacks higher-order thinking abilities including critical and analytical thinking. In contrast to ChatGPT outcomes, which are based on data training, higher-order thinking skills need a thorough comprehension of the situation, common sense, and emotions. A better comprehension of the subject is necessary for the capacity to create high-order critical thinking.

7. Potential Risks to Education

While ChatGPT's advantages present a range of educational opportunities, its drawbacks also carry certain risks. Some important risks are:

- a) **Lack of comprehension of the context:** ChatGPT doesn't have a thorough comprehension of the context. Curriculum understanding, learning style, and cultural context of life are different for each student. Thus, the content recommended by ChatGPT may either be too challenging or too simple for students. ChatGPT may not exactly grade the essay because it does not have background contextual knowledge. Therefore, it possesses various risks in the field of education.
- b) **Threatening academic integrity:** ChatGPT can generate text as a human being. It can provide adequate responses in areas like medicine, law, etc. It poses a possible threat to the authenticity and reliability of online learning. Through ChatGPT, questions concerning the security of online tests and exam cheating have been raised. It has a greater threat to online learning particularly in higher education.
- c) **Perpetuating discrimination in education:** ChatGPT can generate output on the pattern of data trained. There is always the possibility that data trains are unfair, biased, and discriminatory. Thus, the output produced by unfair, biased, and discriminatory data is also discriminatory (garbage in, garbage out principles). Though ChatGPT output is better than other artificial intelligence tools, it carries an ethical risk of supporting unfair discrimination and societal prejudices.
- d) **Democratization of plagiarism in education/research:** ChatGPT does not respond to an exact copy of any text but generates information by synthesizing the train data. Thus, it brought up some moral problems, such as promoting cheating and copying. It is prone to produce fake information. The empirical study showed that the research studies produced using ChatGPT can be published at a reasonable level. It also puts fraudulent information into scientific abstracts that reviewers might not be able to discover. These features may tempt college students to rely on the use of ChatGPT while writing academic materials. Students who utilize ChatGPT might not be aware that it could result in plagiarism. Ethical issues become more significant when AI is more likely to produce inaccurate and absurd results, increasing the likelihood of false material being published in scientific journals.

- e) **Deterioration of higher-order cognitive abilities:** Excessive reliance on ChatGPT may be detrimental to both students and teachers. The usage of ChatGPT may facilitate getting information easier, which causes higher-order cognitive abilities including creativity, critical thinking, reasoning, and problem-solving to diminish. It lessens the desire to conduct independent investigations and come to their conclusions. Whereas an excessive reliance on ChatGPT by teachers might degrade the quality of interactions with learners and intensify already-existing inequalities.

8. Approaches to Support the Use of ChatGPT in Education

To ensure transparency, credibility, academic honesty, and authentic learning while using ChatGPT, students can adopt these five strategies and techniques simultaneously.

- a) **Policy for ChatGPT:** The educator should explicitly and clearly explain the objectives of using ChatGPT. S/he should give specific instructions and rules for using it. The educator should encourage the student to use it and explain the course syllabus that uses ChatGPT. The basic policy might be developed based on the user's experience of the tool such as:
1. For improvement in writing skills students may use ChatGPT which generates easier, more efficient, and more summarised information in a very short amount of time.
 2. The information produced by ChatGPT can be inaccurate and irrelevant. Users should be cautious while using the data produced by ChatGPT. The consideration of information generated by ChatGPT as final is a form of plagiarism.
 3. Users have the option to formally appreciate ChatGPT's contribution to their work. It could also include ideas or problems that ChatGPT helped to identify and accomplish tasks like editing, paraphrasing, or computations.
 4. Users should provide an audit trail of their inquiries and a reflection report or remark with their final assignment or project report.
 5. All reports and assignments created with the aid of ChatGPT will be assessed through a presentation and viva to ensure the knowledge and grasp of the themes and issues.
 6. While writing a report on a single topic by students it is anticipated that reports will be identical to one another. However, students must make sure that their work is original and plagiarized-free, with a minimal number of similarities.
 7. The teacher must thoroughly review the assignment or report that has been submitted. Large AI-based text or suspected plagiarism must be detected and appropriate action should be taken.
- b) **Reflection note/report:** Users must compile a summary of the actions they took to write a ChatGPT-supported report or text, including any strange things they discovered or contradicting information they discovered, any writings they came across that lacked citations, and any original or previously published ideas. Users should also demonstrate the adjustments and improvements made to it. Reflection notes/reports should be short, concise, and precise.

- c) **Audit records of queries:** Users must provide a record of the questions and inquiries they have made as well as the content generated by ChatGPT. It will guarantee transparency, authenticity, and integrity when assessing the concepts. It also helps to distinguish between the ideas produced by ChatGPT and the student's thoughts.
- d) **Employ AI detection tools:** After completion of assignments teachers and students should use trustworthy AI content detection technologies to review the final product. These tools help to differentiate between the content generated by ChatGPT and Human. The output of AI detection tools has to be carefully analyzed. It helps to find the content similarity/ plagiarism in particular assignments.
- e) **Swap roles:** The teacher can swap his role as a student. S/he can generate texts for an assignment using ChatGPT. Students are allowed to evaluate the accuracy, critical thinking, creativity, and authenticity of learning relevant resources, synthesize them, and create a report on them.

9. Conclusion

There is a rapid transformation in the field of education due to the emergence of new technologies. This demands a distinct set of abilities than what people in earlier generations possess. ChatGPT is an emerging artificial intelligence tool. Many teachers and students are not aware of it. Some teachers and students only heard but did not try to explore it. The use of ChatGPT requires proper training in its function. To evaluate the accuracy and authenticity of information reflection report should be prepared properly. ChatGPT like other AI tools has the potential to support educational and research work. ChatGPT is considered revolutionary because its conversation is like a human being and the output generated by it is indistinguishable. ChatGPT may be used to clarify complicated concepts, create essays, solve problems, and practice language and other activities related to teaching and learning. It can solve technical as well as non-technical problems. Teachers can allow students to develop ideas and improve writing skills by using ChatGPT. Teachers may identify the students who have generated more ideas and more contributions than ChatGPT. It is expected that ChatGPT's further development may develop more sophisticated models with a higher level of accuracy.

It will encourage innovation and originality in students' content by separating students' concepts and what has been produced by ChatGPT. Although anybody can use ChatGPT and analyze its output, only humans with higher cognitive abilities are capable of coming up with novel ideas. In addition to being crucial for determining a student's comprehension of a subject and recognizing their unique ideas, reflection notes, viva, and presentations can also be used to evaluate creativity.

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