

# ChatGPT: Boon or Bane for the Teaching Pedagogy

<sup>[1]</sup>Deeksha Tanwar, <sup>[2]</sup>Nandita Kohli, <sup>[3]</sup>Shiva A Raja

<sup>[1]</sup>Bachelor of Design, Fashion & Lifestyle Accessory Design

<sup>[2]</sup>Assistant Professor, Fashion & Lifestyle Accessories Design

<sup>[3]</sup>Assistant Professor, Fashion Communication

Corresponding Author Email: <sup>[1]</sup>deekshatanwar16@gmail.com, <sup>[2]</sup>nandita.kohli@nift.ac.in, <sup>[3]</sup>shiva.raja@nift.ac.in

---

*Abstract— With quicker communication, instant information access, and online interactions, technology has altered our lives, changed the way we communicate with one another, and made the world feel like a smaller place. The introduction of artificial intelligence is one such technological transformation that has started to make its way into our lives, whose effects may be subtle but continue to become more prominent and eventually become an inevitable part of our lives. Artificial intelligence in the 21st century is evolving at a very rapid pace. With the launch of ChatGPT to the public, developed by OpenAI, in November 2022, the applications of the service are proving to be versatile and can be used in a myriad of ways to streamline productivity and enhance the learning experience. The most widely known application of this is reducing friction, especially in the learning process, by providing students with the required information at the click of a button without putting in the effort to derive it; hence, affecting the way they think critically and cohesively. Whilst the service has its own perks in the same scenario, the solution is not to deny them access to it, as their careers in the future would revolve around it. In the following paper, the authors focus on the pros and cons of the bot, how it affects both the teacher and student objectively in the teaching pedagogy, and how both users need to work around and with it in order to make sure that neither of them is hindered during the process of learning.*

*Index Terms: artificial intelligence, ChatGPT, learning, pedagogy, teaching.*

---

## I. INTRODUCTION

Technology has affected every aspect of modern life, including productivity, food and healthcare access, emergency services, transportation efficiency, social interactions, and education. Technology has managed to seep its way into almost all sectors and make an impact, whether it is positive or negative. One such affected area is education. Though traditional education has persisted for a long time, there have been advancements in technology that require it to be incorporated in order to be relevant in the present. The introduction of artificial intelligence in this domain has already started to make its way into our daily lives, whose consequences might be subtle but have and will continue to become more distinguishable and, in due course, become an indispensable part of our workflow and productivity. Automation and efficiency, the two major pillars of Industry 4.0, are enhanced by a human touch in Industry 5.0, which artificial intelligence manages to tie in justifiably. It refers to the coexistence of humans alongside technologies, smart machines and robots. The applications of various artificially intelligent services are proving to be adaptable and can be used in a variety of ways to increase productivity and improve learning. The best-known application of this is to reduce friction, especially in the learning process, by giving students the information they need at the touch of a button. Therefore, it influences critical, coherent and creative thinking. The advancement of such technologies will not only push humans to the most complex parts of minds; impelling one to think beyond the ordinary and established in order to creatively come up with solutions so as to not depend on

automation entirely and be able to add value whilst being objective and cohesive in doing so.

## II. INTRODUCTION TO CHATGPT

One of the latest and most popular AI tools in the limelight, is ChatGPT which is an artificial intelligence chatbot which utilises natural language processing and machine learning, developed by OpenAI, made public in November 2022 with their GPT 3.5 version. It uses the GPT language model, which is an abbreviation for Generative Pre-Transformer Trainer used to answer questions, write text, compose emails, have conversations, explain code in various programming languages, translate natural language to code et cetera. The model has been fine-tuned on tasks such as language translation, question answering, and text generation, enabling it to perform these tasks accurately. Through the constant development of artificial intelligence rapidly over time, a surge in the use of AI-generated text in education, certification, hiring and recruitment, social writing platforms, disinformation, and more has been identified.

## III. CHATGPT IN EDUCATION

There are mixed emotions around the introduction of ChatGPT and its use, especially in the world of education. On one hand, teachers, professors, and lecturers are concerned about ChatGPT's potential negative impact on academic integrity. They fear chatbots will increase plagiarism and spread academic fraud, while on the other hand, students are facilitated by chatbots, which can interpret student questions and provide accurate and helpful answers, personalised recommendations based on a student's learning history,

helping them improve their academic performance over time, and round-the-clock assistance during the learning process, providing both the student with instant support and feedback and allowing teachers to maintain a work-life balance.

#### **IV. POSITIVE IMPACT OF CHATGPT ON STUDENTS**

With the launch of ChatGPT being so recent, a multitude of uses of the service are being discovered and inculcated in one's workflow, streamlining the process and reducing the overall friction whilst working. Personalization remains one of ChatGPT's most transformative aspects. Since the model is trained on a machine learning algorithm, it uses large datasets to identify trends, becomes sophisticated over time, and is hence able to deliver personalised content through tailored and interactive responses. Instead of adopting the one-size-fits-all strategy that traditional education is built on, it can assist in developing lesson plans, tutoring, and recommendations that are curated for the user and create an overall holistic learning experience. Making educational facilities and resources more available would have a broad appeal. Furthermore, teachers must strike a balance between their job and personal lives, so they are unable to respond to emails late into the night. For information and assistance, students can access ChatGPT at any time for educational resources and support. It could also be beneficial for language learning, as it is something that is hard since it tests both one's intellect, which must create new cognitive frameworks, and consistency and sustained practice. It encourages the use of genuine language while simulating real-world scenarios. The processing of the target language can be sped up, and fluency can be improved with more exposure to it.

#### **V. NEGATIVE IMPACT OF CHATGPT ON STUDENTS**

Even though ChatGPT has an array of applications in a student's life to make the learning process efficient regardless of the availability of resources or time of day, there are a number of drawbacks to becoming accustomed to such technology for every innovative and critical input needed by students. The interaction with ChatGPT only requires a smart device and an internet connection; the need for human interaction has been reduced in the process, thus hindering the growth of social skills at a young and developing age. Moreover, since the information is available at the click of a button, it hampers the critical thinking of an individual, which depletes their ability to differentiate between fact and opinion, organise information as cohesive and understandable, and shuts them off from grasping multiple perspectives to create their own viewpoint. Furthermore, the same prompt continues to offer generic responses, which might also raise concerns about accuracy limitations as the data is more or less pulled from the internet and the accuracy of information on the internet is variable because it is not

regulated. Besides, since it is trained on data that is publicly available, there are chances that the data is biased, making the machine biased as well. The main goal of education is to foster personal growth and encourage independent, creative, and critical thinking. Having instant access to information would naturally lead students to choose the simpler approach rather than consider its long-term effects on their development. Additionally, there is also a concern of copyright infringement and plagiarism issues, since all the data produced by ChatGPT is a derivative work of the data it was primarily trained on. Due to ChatGPT lacking empathy and emotional quotient as compared to a teacher, it might not be able to accommodate various learning preferences, cultural backgrounds, or students with special requirements. Although, recognizing that ChatGPT is a relatively new technology and its effects on education have not yet been fully realised, it is important to note that these worries are founded on conjecture and hypothetical scenarios.

#### **VI. POSITIVE IMPACT OF CHATGPT ON EDUCATORS**

From the perspective of a teacher, the majority of the time is invested in doing tasks that can be repetitive but require active attention. Efficiency and automation of repetitive chores are two areas where ChatGPT can be extremely helpful to teachers. ChatGPT can be used to outsource tasks like grading, giving feedback, and producing educational content, allowing teachers to concentrate on giving each student individual attention, support, and guidance. This helps to improve the quality of the learning process, the imparting of knowledge, and human interaction. Most widespread use of ChatGPT has been known to create text-based content, and hence, utilise its potential to create a range of educational content, from tutorials and guides to even quizzes and flashcards for ease in revision and reduced friction in delivering intended content. Moreover, the ability of ChatGPT also enables it to produce content that adjusts to the requirements, learning style, and performance of various students. Regardless of the location, schedule, or different needs of a student, educational facilities can be made available, making the overall learning process inclusive and equitable.

#### **VII. NEGATIVE IMPACT OF CHATGPT ON EDUCATORS**

"Excess of everything is bad" - this quote perfectly describes how the over utilisation of anything can be detrimental. Though teachers are worried about the risk of ChatGPT on students, there are a variety of ways which can in turn be detrimental to them as well. Over dependence on the chatbot might lead to teachers becoming more reliant and prefer using technology to create educational materials instead of coming up with innovative ways to integrate it into their pedagogy. They also might be less inclined to develop their own assessment method or ways of providing

constructive feedback and grades to be able to be substantial to students and help them grow and improve as learners and overall human beings. Incorporating such technology into one's workflow also poses the risk of having limited human contact, which would be detrimental to the students' social and emotional growth. With the launch of ChatGPT to the public and its utilisation in the educational setting, there is a risk of teachers having limited knowledge about the technology and its functionality and, therefore, not being able to utilise its functionality to the full potential or even incorporate it in an incorrect way in their pedagogy.

### VIII. HOW TO PREPARE AND ADAPT IN THE FUTURE

A perfect analogy can be drawn from the calculator and mathematics to ChatGPT and writing. The same way calculators became an important and efficient tool for students in a maths classroom, though they didn't completely take over as the derivation process in maths is just as important, ChatGPT has the potential to be an important tool for students to hone their writing and critical thinking skills along with their communication skills. It can prove to be an asset in the long run, but only if there is a certain delineation in where it can facilitate and improve instead of just completely depending on a mere tool for creative, critical, and coherent input; the detriment being that, though it reduced friction of reaching the conclusion without going through the process, it later hinders as they would fail to understand why that conclusion makes sense and how to expand that same system and add that learning process in different scenarios as a student.

Moreover, ChatGPT, being an artificially intelligent tool that naturally lacks emotions and empathy, relies on the information it has been trained on, which is mostly pulled from the internet. The internet, which is not entirely regulated, has the potential to have data that is variable and possibly biased because it is being trained on a particular set of data, regardless of how big the data set is. The code of honour needs to be reviewed, but that doesn't mean children should be denied access to it because, in the near future, such advancements will be central to their jobs. Teachers must alter the way they pose the question in an effort to use more human input and to actively challenge students to work towards making the learning journey as important as achieving the result in order to ensure that the tool is used as a help rather than a crutch.

### IX. CONCLUSION

ChatGPT, the artificial intelligent chatbot, created by OpenAI has the ability to transform education entirely. It can help both students and educators with tasks like curriculum creation, essay writing and making flashcards making the line very thin between the usage of ChatGPT as a tool rather than a crutch. It would undoubtedly help in the process of enhancing the efficacy of the learning process across a

number of parameters, but it could also result in a decrease in human interaction, which could hinder their ability to develop important social skills. Understanding ChatGPT's instructional value is crucial for educators, not only for deeper and more engaged learning, but also for making the most of it to create simple, frictionless methods for them to teach with. Similar to how "Google" is associated with search engines and "Xerox" is associated with photocopying, "ChatGPT" is likely to become synonymous with quickly getting relevant data.

### REFERENCES

- [1] <https://www.entrepreneur.com/science-technology/how-will-chatgpt-change-education-and-teaching/445018>
- [2] <https://www.newsweek.com/if-chatgpt-can-replace-what-we-teach-we-should-teach-something-else-opinion-1781216>
- [3] [https://medium.com/chatgpt-learning-asia/the-impact-of-chatgpt-on-education-739b7479713c?utm\\_source=pocket\\_saves](https://medium.com/chatgpt-learning-asia/the-impact-of-chatgpt-on-education-739b7479713c?utm_source=pocket_saves)
- [4] <https://elearningindustry.com/chatgpt-for-students-how-ai-chatbots-are-revolutionizing-education>
- [5] <https://elearningindustry.com/a-new-buzz-in-teaching-and-learning-chatgpt>
- [6] <https://cambrilearn.com/blog/impact-chatgpt-education>
- [7] <https://www.nytimes.com/2023/01/12/technology/chat-gpt-schools-teachers.html>
- [8] <https://www.brookings.edu/blog/education-plus-development/2023/01/09/chatgpt-educational-friend-or-foe/>
- [9] *Artificial Intelligence in Education: A Review*. (n.d.). Artificial Intelligence in Education: A Review | IEEE Journals & Magazine | IEEE Xplore. <https://ieeexplore.ieee.org/document/9069875>.
- [10] Göçen, Ahmet & Aydemir, Fatih. (2020). Artificial Intelligence in Education and Schools. *Research on Education and Media*. 12. 13-21. 10.2478/rem-2020-0003.
- [11] Kengam, Jagadeesh. (2020). ARTIFICIAL INTELLIGENCE IN EDUCATION. 10.13140/RG.2.2.16375.65445.