Is "Chat GPT" Going to Replace Academia? A Critical Review from the Sociological Perspective

هل ستحل "ChatGPT " محل الأوساط الأكاديمية؟ مراجعة نقدية من المنظور السوسيولوجي

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Abstract:

Objectives: The study aims to assess the role of ChatGPT in academics and to explore the potential risks of using chat GPT in academia.

Methods: The study has used a descriptive research design by following a qualitative method using the secondary data. Various studies, researches, websites and reports on AI have been analysed to achieve the objective of the study.

Results: It has been assessed that ChatGPT is being used for various purposes in education and research. However, it also has potential risks such as spreading fake and plagiarized content and in the long term can affect the research ethics and integrity.

Conclusions: This study concludes that ChatGPT may be used for the betterment of society not to risk the human race and its cognitive capabilities.

Keywords: *Academia; Artificial Intelligence; ChatGPT; Risks.*

الملخص:

الأهداف: تهدف الدراسة إلى تقييم دور ChatGPT في الأوساط الأكاديمية واستكشاف المخاطر المحتملة لاستخدام الدردشة ChatGPT فيها.

المنهجية: لتحقيق هدف الدراسة استخدمت الدراسة تصميم بحث وصفي بإتباع منهج نوعي باستخدام البيانات الثانوية. تم تحليل العديد من الدراسات والبحوث والمواقع الإلكترونية والتقارير حول الذكاء الاصطناعي.

النتائج: تم تقييم أن ChatGPT يستخدم لأغراض مختلفة في التعليم والبحث. ومع ذلك، فإنه ينطوي أيضًا على مخاطر محتملة مثل نشر محتوى مزيف ومسروق ويمكن أن يؤثر على المدى الطويل على أخلاقيات البحث ونزاهته.

الخلاصة: خلصت هذه الدراسة إلى أنه يمكن استخدام ChatGPT لتحسين المجتمع وليس المخاطرة بالجنس البشري وقدراته المعرفية.

الكلمات المفتاحية: الأوساط الأكاديمية؛ الذكاء الاصطناعي؛ ChatGPT؛ المخاطر.

Introduction:

Artificial Intelligence has brought a revolution in the realm of leisure, education and learning. AI based systems are used in various daily to daily life activities such as voice assistant makes our lives so easy that we don't even have to type, by giving voice commands the world is in front of us. Various AI based platforms such as smart classrooms, automatic assessment, and virtual mentors are being used which has revolutionized the discourse of education (Shidiq, 2023). These new generation individuals who understand the internet better than previous generations are termed as Y, Z and Alpha (Shidiq, 2023). ChatGPT, an OpenAI chatbot, reached 100 million monthly active users in just two months after its launch, becoming the fastest growing consumer application in history (Reuters, 2023).

Chat GPT is an open Artificial Intelligence (AI) tool that can mimic the human abilities of thinking, writing, and problem solving. It is a model which uses conversational medium with its users and gives answers to the follow up questions and provides assistance in almost innumerable tasks such as writing mail, essays, assignments, and research papers and many more. Although it has brought a revolution in the realm of technology as it can give solutions to almost every question across various disciplines with highest precision in no time, however chat GPT has varied applications in the various fields and it might become a cheap alternative for the generation and dissemination of knowledge replacing the scholars, experts and academia.

ChatGPT has undergone various revisions to improvise itself best fit the needs of humans by considering the feedback of the humans (Christiano, et. al, 2017) ; (Lambert, et. al, 2022). It uses advanced conversational chatbot and is solving the problems of almost every field of knowledge. By utilizing the existing data and learnings ChatGPT has been optimized to perform best and various individuals and organizations such as schools, teachers, employers, industry and academia are using accordingly to reach to their objectives and goals in a precise and timeless manner. But as is often the cse with such transforming technologies there began a misuse. College students are using this to do their assignments (Bleumink & Shikhule, 2023); (Cotton, et. al, 2023) and research scholars are using it to write papers with no effort (Gao, et. al, 2022). Various actors use it to produce fake news over social media platforms (Angelis, et. al, 2023), educational institutions have been found providing mental health counseling without their prior consent. In addition to all this, ChatGPT has the potential to create realistic stories that could deceive the readers (Bang, et. al, 2023). It is nowadays attracting many researchers to use it for writing research which could create a huge pile of fake and plagiarized research which would not be distinguishable from the original work hence it has the huge potential to replace the academia who are devoted for the academic and applied research. According to a report in Fortune, nearly 42% of Americans fear that AI will act as a barrier for them to get jobs and seven out of ten believe that Ai will replace humans in various jobs (Outlook India, 2023). Responding to the rapid emergence of generative AI tools UNESCO held a meeting of ministers of education from across the globe to assess the opportunities, challenges and risks of AI in education systems. Stefania Giannini, UNESCO Assistant Director-General for Education said that generative AI opened new opportunities as well as challenges for education. But there is an urgent need to integrate this into education on our terms by prioritizing safety, transparency, inclusion, diversity and quality (UNESCO, 2023).

Chat GPT has become the most powerful tool of artificial intelligence (ChatGPT online, 2023). This platform based on AI has huge merits as well as demerits for society. This research is an endeavor to explore the opportunities and risks created by ChatGPT.

Conceptual Framework:

- **Artificial Intelligence:** The term "Artificial Intelligence" for the first time used by computer scientists John McCarthy, Marvin Minsky, Nathaniel Rochester, and Claude Shannon in 1955. The phrase describes how machines may "use language, form abstractions and concepts, to solve kinds of problems currently reserved for human beings." (McCarthy, Minsky, Rochester, & Shannon, 1955) further McCarthy defines it as an "Intelligent machine" which aims to make machines do things that humans can do. The term "AI", therefore, is sometimes used interchangeably with the terms "machine intelligence" and "intelligent machines" (McCarthy, 2007). Basically, It is a web based system which works with the same intelligence as human work. It does so by learning, adopting, mimicking, and understanding human language (Shidiq, 2023). There are two types of AI, one is strong AI or general AI (AGI- Artificial General Intelligence) which

is capable of carrying out any intellectual and cognitive tasks that a human can carry out and on the other hand weak AI can only carry out tasks in a manner that is similar to that of a human (Kaplan, 2016).

- **Chatbot:** It is simply a computer programme which has been designed to simulate the conversation between human and computer over the internet. It gives answers to human questions by using artificial intelligence in an online conversation (IBM, n.d.)
- **GPT:** GPT stands for Generative Pre- trained Transformers (ChatGPT online, 2023). It works by using huge amounts of data publicly available. It has different versions for example the very first version was GPT, then GPT-1 which followed GPT-2 followed by GPT-3 and the latest version is GPT-4. GPT-4 version was released in March 2023 which can work in the fields of photo and video creation (ChatGPT online, 2023).
- **Chat GPT:** It is an artificial intelligence based chatbot which can produce creative texts and solve problems in varied fields such as report writing, research, projects, assignments etc. It understands human language and can produce creative and artistic works such as poems, poetry, stories, and novels (Shidiq, 2023).
- **Academia:** The environment or community concerned with the pursuit of research, education, and scholarship.
- **Risk:** In the context of this study risk has been defined as satiated by Ulrich Beck; the risk in modern society has been created by own social development. The risk associated with global warming is one example of risk. He argues that the risk inherent is modern society and it will contribute to the global risk society. And the risks are produced by technological changes. And these risks would percolate to various areas such as environmental damage, health risk, unemployment and heightened job insecurity.

Theoretical Framework:

Various sociological theories and perspectives underpinning this research are- Ulrich Beck, a German sociologist stated that modern society with its technological change would create a risk society and this risk is a global risk. Technological change creates new risks, and these risks are not only limited to environmental and health risks; these changes would percolate to a wide variety of changes such as job insecurity, shifting employment patterns, declining influence of tradition and custom and erosion of family relations (Beck, 2014). It is explicitly mentioned by Beck that there would be a risk of job loss and the discussed issue in this paper focuses on the potential risks of replacement of academia by the AI tools such as ChatGPT.

Another notable sociologist Anthony Giddens who worked on structuration theory, emphasizes the reciprocal relationship between social structures and individual agency. Here, it can be seen that society shapes the development and implementation of AI technologies, while AI, in turn, influences social structures and individuals' behaviors. And it could have an impact on power dynamics, social interaction and redistribution of resources. It is not only about a reciprocal relationship between AI and society, in fact it can capture power and knowledge of our society. In the same context, the idea of Michel Foucault also focuses on power and knowledge and shows how they operate within social institutions. From his perspective Chat-GPT can be seen as a form of disciplinary power, shaping and controlling human behavior through surveillance and algorithms.

In today's technologically advanced society, AI holds a hegemonic position where it dominates every aspect of society. Similarly, Jurgen Hebermas also focuses on the role of communication in democratic society in the public sphere. It can be seen that AI has potential that can affect public discourse and deliberation and it is a matter of concern that the potential erosion of democratic participation and the public sphere through AI-mediated communication, such as algorithmic filtering, echo chambers, and the manipulation of information. constantly and rapidly changing nature of contemporary society which Zygmunt Bauman defined as "Liquid modernity" has been infected by high-tech information and technology and it affects social cohesion, ethics, and human relationships. However, there is another view which advocates the potential of AI to disrupt traditional boundaries and hierarchies. Haraway's concept of Cyborg, which offers a feminist perspective on the interaction between AI and society and highlights the intersection of technology, gender, and identity, and the transformative possibilities that AI presents for social and cultural norms.

These sociological theories offer diverse perspectives on the interaction between AI and society, providing critical insights into the social, political, economic, and ethical implications of AI technologies. By drawing these theories and ideas, we can gain a critical understanding of the complex relationship between AI and society and its broader societal implications.

Literature Review:

After undergoing an extensive and systematic literature review it has been found that there are mainly two perspectives for AI, one view is optimistic and other is pessimistic about AI. Contemporary technological changes such as the advancement of artificial intelligence has created a fear of job loss and inequalities. Although it can offer much productivity and efficiency, it can also control the lives of the people. The technological changes in the past in the form of automation specifically by robotics had brought inequalities in many developing countries (Ernst & Samaan, 2019). Despite these prospective risks machines such as AI can cross-fertilize for a mutual existence and the gloomy picture portrayed of AI as a job eliminator can be transformed positively (Hamid, et. al, 2017). There is a huge uncertainty about the future of AI. There are many questions which need to be addressed and one such question is, how AI would replace humans? But the important thing is to adopt the practices which ensures occupational safety and before introducing these types of AI based tools its implications for the future of the work has to be understood Howard, J. (2019). AI and its applications have become a cost-effective tool and could be used in almost every sector of the society (Vijayakumar & Sheshadri 2019). Rise of artificial intelligence has created a serious debate about its future role in teaching and learning in higher education. The risk of job displacement associated with the adoption of technology innovation requires a reconsideration of the teacher's role and pedagogies. Hence there is a need to do research on the ethical implications of the use of AI (Popenici & Kerr 2017). ChatGPT can also influence the labor market and many can lose jobs but this will be dependent on the scope of adoption of these automated technologies (Zarifhonarvar, 2023).

The above discussed literatures underscore the various issues associated with the use of ChatGPT, some are concerned with the industrial applications of AI, and some are concerned with the inevitability of the adoption of AI is various fields, but no research understand critically the role of AI is shaping academia in a sociological frame. In such a situation, there is a need to critically understand how AI and specifically ChatGPT is going to shape the academic world.

Objective:

To assess the role of ChatGPT in academics and to explore the potential risks of using ChatGPT in academia.

Hypothesis:

There is a significant relationship between potential risks of using AI (ChatGPT) and academia.

Research Gap and Methodology:

Various researches have been done which underscores positive and negative sides of the uses and potentials of AI, however there is negligible amount of research which understands the true picture predicting the potential threats and benefits of the AI in the field of academics and research. These studies collectively emphasize that AI development presents both benefits and challenges to society, with the social challenges often being complex to identify and address. Since AI would impact different areas and organizations differently therefore it is necessary to understand it in a critical way to know the pros and cons of it in the field of academics and research. The study has used a descriptive research design by following a qualitative method using the secondary data. Various studies, researches, websites and reports on AI have been analysed to achieve the objective of the study. AI and related technologies are emerging technologies which are constantly upgraded and changed keeping in mind various needs and requirements of the industry. And as of now we do not have the full picture of the future prospects of AI given its and the potential risks associated with it. Therefore, this study is based on the contemporary developments and its uses in academia and hence this is its main limitation.

Discussion:

Technology has been an important area for debate, discussion and theory making. Various early thinkers had already predicted the possibilities of chaos with the emergence of industry and latter on Information and Communication Technologies (ICT) for example various early researches have been done in the shed of the advent of personal computer such as a famous work of Sherry Turkle (1984) on "The Second Self: Computers and the Human Spirit" who examined the impact of computers on human cognition and social interactions.

She observed how computers adversely affected the human mind and our tendency to anthropomorphize and use human terms to describe AI (e.g., referring to computers as "electronic brains") which can lead to colonizing the human mind (Turkle 1984). With the introduction of new technologies there needs to train a huge number of scholars, scientists and teachers across the world to run it with ease. According to "OECD" teachers and academia across the world are expected to learn and have competence in artificial intelligence systems (OECD, 2018).

If we critically analyze the prerequisites of learning we can substantiate that learning requires a real time direct interaction with an emotional connection, it also requires a feedback system and an interactive environment in which there are other learners and individuals present. So, these direct and verbal contact of the teacher with the student would be missing in this new technological system based on AI. These AI platforms can reduce the role of the teachers and masters and snatch the capabilities of the students and scholars to think in a critical and innovative way. And hence it has become a new challenge for the world to imbibe creative critical and cognitive competence in the minds of the contemporary and upcoming generations (Shidiq, 2023). They can become mere appendages to the machines.

Further, AI not only colonizes the human mind but also it dehumanizes individuals (Berman 1989), more recently, Mühlhoff (2020) investigated the extraction of user-generated data in deep learning (DL) by demonstrating how DL routinely utilized "involuntary" user-generated data for algorithm training, he highlights how AI advancements are structurally dependent on exploiting human capabilities and free human labor (Mühlhoff, 2020).

- **Artificial Intelligence, ChatGPT and Societal Implications**

The contemporary society is marked by the dominance of information-based society where there is a digitalization of almost every aspect of life. This can give rise to many problems such as information warfare, misinformation, establishing conspiracies, formation of more polarised groups with differential access of information. All these may lead to a 'lack of trust' and 'crisis of truth' (Cardoso, 2023). There is also a fear of job loss and the adoption of this kind of automation in various organizations may place the workforce in jeopardy (Zarif Honarvar, 2023). Various studies found that some sectors might face job displacement and one such sector is academics and research. On the other hand students and scholars are using it to write their assignments and doing cheating which might erode their thinking and creative capabilities. Researchers found that discrimination and bias is also prominent in data and algorithms in AI and chatbots (Akter et al., 2021; Conboy et al., 2022). People might get fully dependent on these AI systems like ChatGPT and can delegate all the tasks gradually (Baird & Maruping, 2021). Developing societies might fall prey to these technologies and would get handicapped as there is a lack of high technologies there and ChatGPT is readily available to them to find their answers. Various educational institutions, analysts, policy makers and governments might entirely rely on these platforms to find solutions and opinions might be influenced by the ChatGPT hence there is a need for the developing countries to understand the risks associated with the ChatGPT which is publicly available and getting used in every domain. It can exclude human subjectivity in the various policy and decision making and can also become inhuman.

- **ChatGPT, Academia and Publication**

The use of digital technologies such as AI can bring digital transformations but the usefulness of it would be decided by the attitude of the organization in which it is being used (Berlak et al. 2020; Grover et al. 2019). And since there is already a huge amount of plagiarized and fabricated research work published every year the new ChatGPT can be harnessed to write academic works and researchers to produce and add on the already available fake research. These AI platforms such as ChatGPT have potential to disseminate fake research, plagiarism and academic and non-academic frauds as it is very difficult to distinguish between AI based and human based writing. Therefore, the importance should also be placed on distinguishing AI generated research and human generated research and writing. (Pegoraro, et. al, 2023). Hence it is very difficult and almost impossible for the editors of the journals to check whether the research paper has been written by humans or AI (Curtis, 2023).

Research articles written using ChatGPT may be considered unoriginal and perhaps problematic from an ethical perspective. Numerous studies have shown that bias can exist in the training data and coding process of language models like GPT-3, which are typically sourced from sizable web-based datasets (Basta et al., 2019; Founta et al., 2018; Hutchinson et al., 2020; Tan & Celis, 2019; Zhao et al., 2019). When these models are

utilized to produce academic research, hidden and unintentional prejudice may be spread, unintentionally perpetuating the bias. Human science has relied on verifiable evidence and a well-established system of checks and balances for thousands of years to assure accuracy and fairness in the findings.

- **Future Prospects of Chat GPT: A Critical Assessment**

Golan et. al, (2023) advocates that AI based tools must be widely adopted in scientific research. Further it can be used in two ways, one is to get assistance in academic writing and other is to detect plagiarism. The whole debate of use of ChatGPT in academics revolves around three issues which are knowledge production, its sharing, and ethics.

The use of ChatGPT in scholarly and research settings can boost productivity and become time saver but these tools raise a number of moral and ethical questions as well as the policy challenges. Huge appreciation is coming from the education sector that ChatGPT can revolutionize the knowledge system by disseminating free knowledge and by solving unsolved problems however it is also well recognized that the use of ChatGPT in education will create innumerable challenges as there is the paucity of well-developed rules regulations and ethical guidelines around the use of AI. In the absence of such rules and guidelines one cannot be penalized or sanctioned when found misusing or abusing such tools. Therefore, it is imperative for the state and the international governments to make rules and enact it to avoid abuse of such tools. The issue is global and hence coordination at the international level would be needed (Dwivedi, et. al, 2023).

To ensure sustainability and spread greater benefits to society it is urgent for the AI community across the globe and researchers to collaborate so that they could work for the social, economic and ethical implications of ChatGPT and AI in general. And it will pave the way for a more inclusive and equitable integration of technology in society.

Conclusion:

There is a widespread sensation which came with the introduction of ChatGPT. Any technology which saves the cost and time must be embraced as it may have the potential to revolutionize the thinking and daily lives of human beings. AI in the field of education can be a promising tool in India and across the world where there is a huge demand for knowledge dissemination as it is the only way to change the world for the better. However, these promising technologies such as ChatGPT also have the huge potential to misuse by spreading fake and plagiarized content and bogus publication which might seriously affect the academia and instill a deep demoralization for true academic work and research. Hence these artificial intelligence tools in general and ChatGPT in particular have to be used in an ethical way so that it may be used for the betterment of the society not to risk the human race and its cognitive capabilities.

Recommendations:

It cannot be denied that ChatGPT and generally AI is the new tool which can be harnessed to produce knowledge and to find solutions in various areas which may increase productivity. But such technologies can also create inequalities as there is already a huge digital divide in developing countries, hence the responsible and ethical use will be a way forward. Areas where AI can be beneficial and ameliorating must be used such as in the medical sector, management, tourism and hospitality etc. However, in the sectors where there is a need of novelty and creativity such as education, research and innovation the use of ChatGPT must be regulated and for the same the ethical guidelines and laws must be made and embraced by the national and international regulating agencies so that the motivation for the innovation and creativity may not be eroded.

Limitations and Scope for Further Research

ChatGPT has been evolving very fast and there is a huge spike in the user base of this platform in very less time. It is used by individuals, organizations and society in various areas. However, this research has mainly focused on the impact of chat GPT on academia. Hence the main limitation of this paper is that it has not covered all the areas holistically, which leaves the scope for further research.

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