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Artificial intelligence in scientific publishing: Embracing change and addressing ethical considerations

Inteligencia artificial en las publicaciones científicas: abrazar el cambio y abordar sus consideraciones éticas

Dear Editor:

In a recent publication,[1] the authors introduced the concept of ''Artificial Intelligence-Directed Scientific Production'' (AIDSP), raising concerns about potential ethical conflicts in the use of artificial intelligence (AI) for scientific publications, particularly in terms of permission and regulation. We would like to present our perspective on these questions.

Scientific publications and AI: In our opinion, AI should be allowed in scientific publications. At its core, AI is a predictive tool that enhances productivity through its predictive capabilities. These capabilities enable the efficient completion of numerous tasks, thereby contributing to increased productivity. By performing these predictive tasks, AI serves as a facilitator of scientific reflection, which is inherently generative. The value of AI lies in streamlining tedious tasks that add little value to the final scientific product, while the value of science resides in interpreting results, not merely obtaining them.

The merit of scientific publications should not be based on the use of established theoretical frameworks, format, or grammatical quality, but rather on generating new theoretical frameworks or adapting existing ones. We would like to emphasize that AI is not inherently generative; its primary function is to be predictive and exploratory.

The question should not be ''AI or no AI?'' but rather ''How do we adapt to AI?'' or ''What are the best ways to optimize our work based on AI?''. Not adopting AI would put us at a competitive disadvantage compared to those who do. From our perspective, this would be analogous to opposing the printing press or calculators for facilitating mathematical calculations.

Regulatory framework and AI: In our opinion, creating a regulatory framework for AI beyond simply providing information about the AI used is challenging for the two following reasons:

Complexity: The inherent complexity of AI requires deep knowledge in various fields such as theoretical, practical, and business aspects of AI, as well as extensive reflection in the philosophy of science and law. It is unlikely that individuals with comprehensive knowledge in such diverse fields exist, and a lack of broad debate may result in bias.

Technological scope: Unlike scientific production, many algorithmic developments and applications emerge outside the academic realm in a decentralized manner, often with open-source code. Major technology companies tend to index their scientific research within their research agendas.[2,3] Nothing would prevent Microsoft from using open databases (e.g., MIMIC-IV,[4] SICDB[5]), developing algorithms based on them, and publishing the results on their website.

These factors make specific regulatory frameworks quickly obsolete or render general regulatory frameworks incapable of capturing the nuances of this rapidly evolving field.

In conclusion, we should focus on how to work with and report on AI to better understand its limitations. Embracing AI in scientific publishing requires addressing ethical considerations while acknowledging the need for appropriate regulatory frameworks.

Translation performed using the GPT-4 language model (demonstrated in supplementary material).

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Conflicts of interest

The authors declare that none have conflicts of interest.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.medine.2023.05.017.

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Teaching tools in critical care: chatGPT

Herramientas docentes en medicina intensiva: chatGPT

Dear Editor:

Artificial intelligence (AI) is increasingly present in the medical world, having been used for antibiotic treatment recommendations,[1] the possibility of writing scientific articles,[2] or proceeding with hospital discharges in patients with good progression.[3]

We want to highlight the potential role of AI from an education standpoint. We understand that education involves the translation of theoretical concepts into practice. P̈racticec̈an be developed through simulation by allowing r̈epeated exposureẗo clinical challenges. However, the effective communication of theoretical concepts is hindered by time or organizational problems, workload, or scientific tasks.

The addition of theoretical foundations has changed: access to a plethora of scientific medical journals through the internet, applications that systematically address medical topics (such as UptoDate), and the emergence of online resources (such as Free Open Access Medicine [FOAM]). In all of these, individuals have to look for answers, thus wasting time and not necessarily getting to solutions to the problem. This access to information is a c̈ommonẗhing, but not a n̈aturalẗhing as curiosity has always been demonstrated by asking questions to someone capable of providing the necessary information (parents-children, attending physician-resident).

Perhaps the current circumstances of theoretical study can be overcome thanks to AI systems based on natural language models (NLM). ChatGPT[4] is a NLM that introduces numerous innovations the most significant one being the adaptation of responses to questions in real-time, minimizing the search time, and allowing more study time. It enables guided learning based on the answers we need so that the student becomes more actively engaged compared to traditional methods.

These could be the limitations of ChatGPT:

- The quality of the response depends on the type of question. Better questions yield better answers.
- ChatGPT has äccumulated knowledgeüp until 2021.
- It should be considered as a complement rather than a substitute for conventional techniques, as it is still in a testing stage.
- It is a useful tool for developing theoretical concepts but may be less effective for decision-making processes.

We present examples of information searches that a young resident interested in learning on traumatic disease might undertake (see supplementary data).

In our usage, we have seen the following:

1) The interaction with the bibliography is interesting including article selection, article synthesis, other references, and critiques.
2) It allows önline simulation,s̈erving as a guide to explore different clinical settings.
3) ChatGPT exhibits c̈autionänd provides inconclusive answers regarding ethical, cultural, or organizational aspects.
4) We found discrepancies in the responses it offers for complex scenarios. While it can suggest a re-sequencing of early care, it does not adequately address traumatic cardiac arrest.
5) We also found that it is a n̈on-confrontationalÄI, which diminishes its teaching capabilties.

AI will change the way we search for information, leading to educational opportunities that we must investigate.

Authors' contributions

All the authors were involved in the drafting of this manuscript and interacted with the artificial intelligence chatGPT.

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