THE FUTURE IS YESTERDAY: AUTOMATING THE THOUGHT PROCESS, AN IMPENDING ASSAULT ON ACADEMIC WRITING

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The statement above is not a conundrum but a perspective. Before delving into this point of view, I will share the core issues with you - the relationship between medicine and technology. In Medical school, we can attest to the detestation against innovation. Medicine and dogma appear to be inseparable Siamese twins. The delusion is so strong that emancipation comes at the cost of castigation. This blind perspective kills creativity, but these chains will not shackle the next generation.

The issue is not emancipation but catching up after the lag. It is this lag; the current physician must contend with, but we should fear not, for there is hope. Accepting and utilizing technological innovations help in catching up with this lag in medicine and research undertakings.

The 21st century has witnessed intense technological advancement. One key component revolutionizing technology and the way we do things is with the use of artificial intelligence.

Artificial intelligence (AI) is defined as the development of computer systems which can use the information available to them to autonomously perform tasks normally requiring human intelligence.[1] In other words, it is the simulation of human intelligence by devices and robots using computer-controlled systems, relying on existing detailed and existing data of products of human intelligence to work seamlessly. This has led to the automation of several complex tasks into an easy routine which can be activated by voice prompts, press of the button or few strokes of the keypad.

Its penetration into every sphere of our life is well established and its introduction and use for article writing, referencing, reviewing, editing, plagiarism checks and publishing processes over the years is well known. The use of Microsoft word editor, Grammarly, Mendeley, EndNote, Zotero, Turnitin amongst others is quite popular among researchers and have been of tremendous help.

However, the use of AI in the article writing process has evolved into an unanticipated level over the last one year. The concept of generative AI has now led to the automation of the thinking and writing aspect of manuscript writing! Using the Large Language Models (LLMs), they have successfully developed ways to answering questions in a format like human thinking and writing.

The introduction of platforms such as GPT 1-5, ChatGPT, Google AI Bard, et cetera has led to the generation of organized, well styled, detailed, and seemingly relevant manuscripts resembling that written by humans being generated within minutes. A task that takes hours or days when done manually. Literature review is now as easy and fast as the blinking of one's eyes. This is a great relief for anyone who has gone through the rigor of spending hours, days and months researching, taking notes, and stringing together a literature review write up for a research paper.

The use of these AI models leaves an author with the duty to conceive the idea for the research, input the question into the bot and then write up the resulting pops up from the platform. An added advantage for non-native English speakers is the fluency in language and style of writing which eliminates the poor construct of English that often ridicule their papers and render them unfit for publication in high impact journals.

However, key issues have evolved following this innovative intervention. Who takes responsibility for the write up? Concerns about plagiarism, promotion of false narrative, wrong submissions, amongst others are also being seen.

These bots string together information in sentences without properly citing the source of the information being projected. This can lead to plagiarism, an unethical practice that is penalized in all spheres of academic writing.

Moreso, AI platforms don't screen out the source of their information. In writing a scientific thesis where relevant journal articles are to be cited, the bot could be including unverified information from newspaper articles, opinion blogs amongst other unverifiable, unreliable, non-scientific sources. The resulting inaccuracies and false information produced by these LLM models are a key thing to consider, as this leads to misrepresentation of facts and findings with consequent wrong conclusions which impact medical

practice. Unfortunately, it is the author who is left holding the sagging straws of this falsehood.

These concerns bring forth key questions that require well thought out responses.

Having made such significant contribution to the article, is the AI worthy of being considered an author? Does the ethical committee hold the AI responsible or the human author? What about other AI software that have been hitherto used to assist in research writing. Is there a difference in their use compared to these generative AIs? Should they also be acknowledged as having assisted in the write up process or can they also be used as co-authors?

What about concerns of intellectual laziness? Undergraduate and postgraduate essay assignments are now being written by AIs. Do the students really think about what has been written by the bots? Do they interrogate the information written by the AI for them? How is using the AI for essay assignment different from copying a textbook write up verbatim and submitting it as an assignment? Would learning not be a thing for AIs alone who keep improving as we use them while we keep diminishing in our cerebration as we rely significantly on their output? Would they not gradually orchestrate our extinction by outsmarting us? What about jobs? The world population is increasing, and job opportunities are not increasing realistically to match up demands. Yet, AIs are now taking up the roles of researchers and research assistants.[2] Of course, in the long term, it is more cost effective and less cumbersome to use an AI. However, from the afore-mentioned concerns, the quality of such literature works may leave a lot to be desired.

These and more have led to journals, publishers, and academic institutions reviewing their policies regarding the use of AIs in academic writing. Indeed, Turnitin, a plagiarism checker recently released an update that would detect the level of AI contribution to academic works.[3]

Several articles over the past year (4th quarter of 2022) have included ChatGPT and other related bots as authors on several journal articles.[4] This has led to an uproar in the scientific community with researchers debating how exactly a bot fits into an author.[4] One of such examples was the listing of ChatGPT as an author in an article published on Elsevier,[5] the authors retracted the authorship role given to the AI[6] following complaints.

Cureus journal held a contest which was first advertised in January 2023 for authors to submit case reports which they were mandated to use ChatGPT in the writing process and they must list it as an author. This was subsequently reviewed, and authors were asked to acknowledge it in the write up. They have subsequently reviewed author guidelines for use of AIs in article writing. Several Journals including Elsevier, Nature, have also released guidelines about use of AIs for works to be submitted by them.

The use of AIs in research writing has come to stay. A welcome help for a tedious work. As a Yoruba adage says[7], a kì í rí éni ranni lérù ká yÍké, meaning, one does not find helpers willing to help with one's load and yet sprout a hump on one's back [from carrying too heavy a load].

Therefore, with this helpful tool, one should not claim to be all sufficient in fulfilling the act of scholarly writing unaided. However, it must be used within a framework that ensures the writer owns a significant intellectual contribution to the research article.

It is the duty of researchers to limit the amount of influence and contribution AIs have on their work to retain a write up as an intellectual property of the author(s). While AI developers have been encouraged to program the bots to properly reference their write ups,[5] the guilt of plagiarism is still on the person utilizing the work of the AI. As such, it is the responsibility of authors to ensure their works are properly referenced, including segments produced by AI platforms.

All Journals must also review their editorial policies to specifically determine the extent of contribution AIs can contribute to research write ups. The need to acknowledge all forms of AI assistance utilized in article writing, editing, and referencing should be discussed by journal editors. These include reference managers, plagiarism checkers, editors amongst others. AIs simulate human intelligence, but nothing still beats the human imagination and creative way of writing. Students writing essay assignments might utilize the help of AIs but should not rely on them. They should be encouraged to exert their creative prowess and in still originality into their works. Lecturers should also cross check submitted essays or dissertations for the extent of AI input in these works using available software. Understandably, they need to set limits of contribution of AIs to student essay assignments and dissertation. Journals and Universities need to construct a terminology for write ups with contents exceeding set limits of AI contributions. Deterrents should be attached to such actions especially in the universities where rejection of submitted assignments may not be sufficient a deterrent.

In the not-too-distant future, we would be witnessing AIs designing the methodology of studies and obtaining data and samples for research endeavours. To what extent would they be responsible for their activities? Who takes responsibility of the data promoted in the study? Who takes responsibility for flaws that follows their work? Would the corporations that created them take up part of the responsibilities of their shortcomings or do they all fall on the individual or groups of persons utilizing the AI for their study?

In summary, it is not about re-inventing the wheel for the future because the future has already been invented; it was invented yesterday. The use of generative AI in research writing has come to stay with obvious benefits and areas of concerns as well. For the researcher, Resident doctors, budding physician to swim with and not against the tide of the technological tsunami, we suggest that they must identify their unique selling proposition, identify their niche audience, and the medium to spread this value to their audience.[8] It is also important that the scientific world start anticipating the other aspects of research that AIs would be deployed to in the nearest future and regulations should be considered for these areas.

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