

Usage of ChatGPT and SciSpace in Research Ideation and Literature Review: A Viewpoint

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In recent times, academic researchers have incorporated the latest techniques to amplify their traditional research tasks to be more innovative. ChatGPT and Scispace, have gained rapid popularity among academics from brainstorming ideas, conducting literature reviews, data analysis, and manuscript write up. These available AI tools help assist researchers by quickly identifying relevant studies, summarize findings, and organize information in multiple columns^{1,2}. AI tools have the potential to systematize repetitive and time-consuming tasks, such as data collection, literature searches, and formatting references. This lets the researchers focus on more complex and creative aspects of their research work¹. This viewpoint shares the experiences based on a workshop conducted for Physiotherapy faculty to sensitize them with hands-on demonstration of AI tools along with the practical benefits and limitations.

ChatGPT helps the researcher to develop research questions based on the prompts given by the individual to refine their existing idea further and to broaden their perspective. By promptly suggesting several research questions, ChatGPT enables the researchers to work on these ideas as per their study context. The ChatGPT's ability to produce

multiple ideas in seconds significantly assists the researchers in exploring new dimensions of their work¹.

However, there are numerous limitations associated with it along with the potential benefits. The ideas generated by ChatGPT might differ in relevance and feasibility, and researchers need to ensure that ideas generated are as per their context. As ChatGPT is designed to work on existing data, its suggestions may reflect any intrinsic biases in that data, which creates a dire need to critically analyze AI-generated content². Furthermore, the output generated by ChatGPT as a result of the prompt, may reflect biases as it is trained on a massive dataset that may contain inaccuracies. In academia, where objectivity and accuracy are essential, this is considered a problematic area³. In research, accountability and transparency are ethical considerations, however, any kind of information generated by ChatGPT cannot be held accountable for its accuracy³. Therefore researchers must be attentive to validate the information provided by ChatGPT before incorporating it into their work. Moreover, overdependence on AI in the field of research raises concerns on ethical grounds, potentially diluting the original idea & sustenance of academic integrity².

Scispace, on the other hand, lets the researchers access a broad range of academic resources and arrange their results. It can search, organize, and summarize key sources very quickly, which saves researchers a lot of time. Scispace offers an important feature, i.e., CoPilot, which can read PDFs, extract tables, and interpret various ele-

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ments within articles. This enables users to review papers effectively and smartly⁴. Along with its benefits, Scispace does have few practical limitations. For instance, one limitation is that you can only enter queries in Copilot for a limited number of times, which resets after a set period affecting the speed and productivity of users, who need to devise a plan to make the most of the tool's expertise⁵.

Feedback from a recent workshop conducted by the Department of Health Professions Education, Liaquat National Hospital & Medical, for the faculty of Liaquat National School of Physiotherapy, has highlighted how ChatGPT and Scispace can offer collaboration and efficacy. Faculty found that ChatGPT helped with brainstorming, and Scispace streamlined the literature review process. The workshop threw light on creating a balanced strategy, encouraging faculty to use AI as a tool while relying on their knowledge and expertise.

During the usage of these tools, the constant need of human oversight holds the utmost importance. To meet the academic standards, the researcher needs to critically evaluate and refine the outputs generated by the model to ensure this reflects the research objective³. The researchers need to be careful to cross-check and validate the information provided by these tools, especially when it comes to literature reviews and citations. The fact that ChatGPT has the potential to generate fake references, one needs to ensure that they are accurate and relevant^{3,6}. With abundant resources available for research information, the ChatGPT should be considered as one of many sources. Rather than solely relying on ChatGPT & SciSpace, it should be used as an additional tool along with other methods and tools. It is noteworthy to highlight that the effectiveness of ChatGPT heavily relies on prompts given as input to generate the responses⁶. The prompts construction should be structured and defined in order to produce better and accurate responses, while weakly developed prompts may result in irrelevant output generation⁷. Therefore, to maximize the utility of these tools, the need for clear, specific, and relevant prompts cannot be overlooked. AI has the massive potential to

enhance the productivity in research. However, there is a minor impact on its utility in developing research framework and data analysis. To enhance the overall research process and outcome, it is crucial for the academic researchers to gain formal training on how to effectively use AI while considering the limitations⁶. Through sensitizing them, it is possible to enable researchers to utilize AI in their task while maintaining the quality of their research.

To conclude, ChatGPT and Scispace are commendable resources assisting in the process of research but are best used as adjuncts to the competence, knowledge, and expertise of the researcher. Human understanding required to assess the quality and relevance of the information is crucial in the utility of AI. They are well equipped with their specialty and can interpret the data findings within their own broader context. The capability of human researchers to bring creativity and innovative ideas to the research process is well understood. Therefore, they are much more proficient in exploring unique research ideas, and that AI may not consider. To conclude, with the evolving need to integrate AI into research, there is a growing need to incorporate it in formal research-related faculty development workshops. By incorporating the strengths of AI with academic rigor, researchers can amplify their productivity and broaden their research approaches, all while ensuring that the high-quality standards, caliber, and novel individuality of their research are not compromised.

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