Bangladesh Journal of Bioethics

Review Article

Prospects and Challenges of Electronic Journals and Artificial Intelligence in Scientific Scholarships

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Abstract: Until 1971, articles were not freely accessible to everyone online. Project Gutenberg made the dream a reality. Exorbitant increases in the cost of print journals have forced publishers to reduce their publications and turn them from the print to the electronic journal (e-journal) medium. Higher visibility of Open Access (OA) leads to a higher number of citations, a better h-index of authors, and the impact factor (IF) of journals, which gain the popularity of e-journals. However, authors face a problem in predatory journals, Article Processing Charges (APC), etc. It is not late to write this article for in-depth understanding of e-journals, AO and the impact of Artificial Intelligence (AI) in academic scholarships, especially for novice readers, authors, and researchers. This article also depicts the importance of things that need to be kept in mind when publishing an article for higher citation in the era of electronic publication.

Key words: e-journal, AO journal, AI, APC, publication ethics, bioethics.

Introduction: E-journals today are widely accepted methods for sharing information. The stringent rules and regulations have enhanced the trustworthiness and acceptability of e-journals[1]. Expedite review and editing system[2], as well as cost-effectiveness and easy access of journals[3], both the author and readers may induce in ejournal as a creditable source of scholarship that fosters communication within the academic circles and boosts job, promotion, and global funding. Studies indicated that manuscripts that appear in e-journals with open access (AO) quality receive more views and downloads compared to traditional print medium[1]. Additionally, there is strong indication that the greater visibility of articles can result in higher numbers of citations[1]. More cited articles by the other increase the h-index (Hirsch Index), a matrix proposed by Jorge E. Hirsch in 2005, referred to the researcher's contribution in

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scientific scholarships[4]. On the other hand, the availability of published material online opens more doors for plagiarism, unauthorized use, or re-use of the material[5]. Therefore, this article is important for being aware of e-journals, especially for novice readers, authors, and researchers.

Methodology: This study utilized secondary data sources and was conducted at Shamima's Labs in Dhaka, Bangladesh, from October to December 2024. The literature reviewed the online published articles, books, and news content for the last ten years between 2015 and 2025. Five articles were beyond the date to understand the history of AI. Only articles published in open access and the English language were considered. The authors accessed PubMed, NML, Web of Science, and Google Scholar to gather relevant information. For data retrieval, the authors employed keywords including e-journal, AO journal, APC, AI, publication ethics, and bioethics.

Results: E-journals are digital publications accessible online. Historically, online periodicals came into existence in 1971 by Michael S. Hart, a student at the University of Illinois, by the Gutenberg Project. He succeeded in techniques to make articles more accessible to everyone online, transforming physical content into digital content. Hart and his coworkers manually copied on the computer and only 10 texts were available in 1989[6]. Later, ABU (Association des Bibliophiles Universels), was created for the public digital library in 1993[6]. In the early 21st century, Wikipedia launched a digital multilingual library project "Sourceberg" in 2003[7]. Google started its journey of digitization with the Google Books Project in 2004, and now over 130 million books & articles are available online through Google [7].

Typically, the editorial process for e-journals mirrors that of print journals, where submitted articles undergo peer review before being accepted or rejected by the editorial board, and are published in a layout similar to that of print editions[2]. Online articles are offered in PDF, HTML, or XML formats[7]. As academic

practices evolve with the increased internet access, e-journals have become the dominant format in the publishing landscape.

Nevertheless, the cost-effective nature of e-journals is an alternative to traditional print journals (p-journal)[3]. They are published immediately upon completion, often before their print counterparts[1]. Users can access articles from their personal computers at home via the Internet[8], even when libraries are closed[1], and allowing thousands of users access to articles at a time. Articles can be searched through various criteria, including titles, keywords, name of the author, and DOI (Digital Object Identifier), etc[9]. E-journals are environmentally friendly, contributing to reduced carbon emissions and promoting a greener atmosphere compared to print media[10]. They are published under Creative Commons (CC BY) licenses, enabling researchers to cite articles with proper attribution without need for prior permission from the authors [11]. Table 1 shows the difference between the e-journal and p-journal.

Table 1 Difference between the e-journal and p-journal.

Point of Discussion	E- Journal	P- Journal
Medium of publication[12]	Electronic medium	Print medium
Costs[1]	Less expensive	Expensive
Distribution of copics[12]	No need of mailing. Information sent automatically by email.	Need to mail print copies
Communication pattern[12]	Informal communication patterns.	Involved a number of methods e.g. use of indexes, library catalogs, references/citing from other articles, and recommendations from readers and colleagues by postal mail.
Funding[1]	Subsidized by a government, professional society, subscription, pay-per-download, or other fees.	Mostly funded through subscriptions or advertisements.
Waiting time[1]	Quick submission and quick peer review cut down on valuable	Many factors contribute to the paper wait, particularly the peer-

	waiting time for publishing.	review process. Reviewers are busy people and can take a long time to submit their critiques. Correction according to the reviewer's comment is another time-consuming matter as it depends on the library.
Labor [1]	Less laborious, can work at home.	Laborious
Reviewer[2]	Easy to find a reviewer's pool quickly.	Heavy task to match the manuscript's specific qualified reviewers.
Authenticity[13]	Sometimes less credibility due to the speed up of the written article, review, and editing process; quick accessibility; and easy and economic distribution.	Disseminating information ensures the credibility of the Journal.

However, a technologically advanced system of AI significantly enhances the e-journal's importance, attracting the attention of all users. AI can efficiently generate literature, draft manuscripts, and analyze complex datasets, editing, proofreading, and formatting, saving time and resources [14]. Its automated features minimize human errors in the repetitive tasks such as data entry and analysis and referencing management[15]. Language support, rewriting, paraphrasing, plagiarism detection, reference manager and citation verification uphold the journal's standards, ensuring accuracy and reliability [14,17].

Also, AI can maintain the integrity of academic publications by identifying potential data fabrication or manipulation, which helps mitigate subjective interpretations and biases [16]. Its machine-driven nature provides a consistent and impartial evaluation of articles, ensuring authenticity throughout the editorial process. Currently, advanced systems of AI can analyse context rather than merely matching text strings, identify deep plagiarism. Various languages translation algorithms, to track the plagiarism and the blockchain is possible unauthorized authorship[18]. AI aided ISSN (International Standard Serial Number), DOI and ORCID ID results standardization and validation of scholarly work and permits citation and IF of academic journals[16]. Despite the numerous advantages of AI, challenges remain in ethical standards, accuracy, privacy, and the necessity for human oversight in scientific communication[19]. UNESCO has recommended a human-centred approach in deployment of AI[20]. Table 2 shows the prospects and challenges of AI in academic scholarships.

Table 2 shows the prospects and challenges of AI

Pros:	Cons:
1. Efficient Detection: AI can quickly and accurately detect instance misconduct, such as plagiarism, duplication publications, cheating, and unauthorized collaboration in academic work[21].	1. False Positives: AI systems may generate false positive results, flagging legitimate content as plagiarized or inappropriate. This can lead to unfair accusations [22]. 2. Adaptation by Cheaters: students develop new methods of cheating; Cheaters may find ways to bypass AI detection algorithms[15]. 8. Ethical Considerations: The use of AI in academic integrity raises ethical questions, such as the extent of monitoring and the potential for surveillance[23]
3. Consistent Standards: AI applies consistent standards to all submissions and reduces bias. Students receive prompt feedback on the originality of their work, allowing them to make corrections before submission[24].	3. Privacy Concerns: AI systems may need to access personal data and academic submissions, raising concerns about student privacy and data security[25]. Initial Setup: Implementing AI systems can be complex and require technical expertise and training, potentially posing challenges for some educational institutions [26]. Cost: Developing and deploying effective AI tools can involve significant costs for educational institutions [26].
4. Educational Tool: AI can be used to educate students about proper citation, referencing, and academic writing practices, fostering a culture of integrity[15].	Depersonalization: AI tools that automate certain research tasks may lead to a depersonalization of the research process, potentially reducing the researcher's critical thinking, creativity, and understanding of the subject matter[27].
6. Millions of people can read and download[28]. Post-publication modification and update contents[29].	Inconsistent connection of websites of journals[28] and infringement of copyrighted laws. that restrict the copies of reproduction[7]

Discussion: The predatory journal is the negative aspect of the OA journals, which profit significantly without providing genuine publications, misleading authors[1]. Article Processing Charges (APC) is another concern within academia[30]. In the early 2000s, the business model of journals was developed by the inception by BioMedCentral and PLoS [1]. Each article was charged between $1,000 and $3,000 in 2007[1,] however, in 2024, it increased between $2,644 and $7,754[30]. Some prominent OA journals charge heavily after a paper is accepted. Multimillion-dollar industry has evolved in the AO publishing sector[31]. However, it is important to keep in mind that AO articles and the multi-disciplinary nature of journals are highly viewed and cited more than subscribed journals[32].

The good news is that DEI (Diversity, Equity, and Inclusion) has launched to support authors from the global south, non-English speakers, and those with disabilities[30,] guided by UNESCO, the core principles of inclusion and equity[20]. Many researchers, especially those in least and middle-income countries, still face challenges in using cutting-edge digital tools. An unpublished data of Shamima's lab on country-specific results showed that 65% of editors, 68% of reviewers, and 60% of authors were challenged for e-journal and AI solutions. Nevertheless, 70% of reviewers prefer the hard copy. Almost three-quarters of stakeholders were less aware of the rules and guidelines for AI ethics (Unpublished result, presented in APAME 2024 in Australia).

However, Incorporating DEI principles, Springer Nature's Snapp, Curie, Elsevier, and Scopus AI, SAGE offer tools for quick research submissions, summaries, and integrity checks[30]. Elsevier has also piloted a program to adjust article processing charges based on a country's Gross National income per capita. Wiley's allows free access to authors whose research is funded by government[30]. Clarivate is develops AI tool to identify journals that may not meet quality standards for Web of Science inclusion, while the STM supports integrity integration tools like Manuscript Manager and PubPeer[30].

Conclusion: An e-journal is as similar to print journals. Cost-effective landscape with free access characters, e-journal viewed worldwide. Now, e-journals have become the dominant journals. Print journals have been subsequently changed to electronic versions. However, Free AO articles are highly viewed and cited more than subscribed journals. Also, the multi-disciplinary journals are viewed more and read more than discipline-specific journals. ISSN, DOI, and ORCID ID results standardization and validation of scholarly works, and allows more citation and IF of academic journals.

Limitation: There were some obvious limitations in this article. Firstly, English literature was reviewed only. Important aspect of print, AO, and AI in other languages was outside the scope of our article. Secondly, articles, books, and news contents were viewed for literature search. Important regulations and documents were not consulted, therefore, important findings in the academic scholarships were overlooked. Thirdly, literature was not searched after 2015. Previous articles would have had an important understanding and had a good impact on this article. Only non-subscribing open access articles were considered. These may have a bias towards this article.

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