Applications of AIGC in Academic Journals and Coping Strategies: Postprint

Authors: Dong Yongyang, Tan Feng, Jiang Lihui, Guo Mingxing

Date: 2025-09-19T15:52:12+00:00

Abstract

【Objective】 To investigate the current application status and challenges of Artificial Intelligence Generated Content (AIGC) in academic journals, and to propose corresponding strategies. 【Method】 This study analyzes the application scenarios and benefits of AIGC for creators, editors, and readers, and proposes countermeasures from the perspectives of journal publishing institutions and editorial offices regarding challenges encountered during implementation. 【Results】 The application of AIGC in academic journals can facilitate efficient knowledge production, diversify publishing formats, and accelerate the dissemination of academic knowledge; conversely, it also poses significant challenges to the high-quality development of academic journals, including increased risks of academic misconduct, prominent copyright attribution issues, and heightened regulatory difficulties. 【Conclusion】 The emergence of any novel technology possesses inherent duality, and AIGC is no exception. Against the backdrop of integrated media convergence, AIGC technology not only transforms information dissemination paradigms but also assumes an increasingly pivotal role in the publishing domain. This paper aims to systematically examine the impact of AIGC on academic journals and propose targeted response strategies, thereby providing a theoretical reference for the sustainable development of academic journals within the integrated media ecosystem.

Full Text

Application of AIGC in Academic Journals and Response Strategies

Dong Yongyang, Tan Feng, Jiang Lihui, Guo Mingxing Editorial Department of Qilu Nursing Journal, Shandong Nursing Association, Jinan, Shandong 250014*

Abstract

[**Objective**] This study explores the current application status and challenges of Artificial Intelligence Generated Content (AIGC) in academic journals, and proposes targeted response strategies. [**Methods**] We analyze the application scenarios and benefits of AIGC for authors, editors, and readers, and propose countermeasures from the perspectives of journal publishing institutions and individual editors to address challenges arising during implementation. [**Results**] AIGC application in academic journals can achieve efficient knowledge production, diversify publishing formats, and accelerate academic knowledge dissemination. However, it also introduces significant challenges to high-quality journal development, including increased risks of academic misconduct, prominent copyright ownership issues, and heightened regulatory difficulties. [**Conclusion**] All emerging technologies possess dual characteristics, and AIGC is no exception. In the context of integrated media, AIGC has not only transformed information dissemination methods but also plays an increasingly important role in the publishing field. This paper aims to analyze the impact of AIGC on academic journals and propose targeted response strategies, providing a reference for the healthy development of academic journals in the integrated media era.

Keywords: Generative Artificial Intelligence; Academic Journals; Application Status; Response Strategies; Copyright Ownership
CLC Number: G230
Document Code: A
Article ID: 1671-0134(2025)08-154-04
DOI: 10.19483/j.cnki.11-4653/n.2025.08.034
Citation Format: Dong Yongyang, Tan Feng, Jiang Lihui, Guo Mingxing. Application of AIGC in Academic Journals and Response Strategies[J]. China Media Technology, 2025, 32(8): 154-157.

Introduction

In recent years, the rapid development of AI has significantly advanced generative artificial intelligence technology, profoundly affecting all aspects of life and becoming a key technology in the information age. As early as 1950, Alan Turing proposed the "Turing Test" as a method to determine whether machines possess "intelligence" —that is, whether machines can imitate human thinking patterns to "generate" content and interact with humans [1]. Since then, humanity has anticipated using AI for content creation. AIGC represents a crucial branch of AI focused on creating new content—such as text, images, and audio—based on learned data models. The most representative example is ChatGPT, which not only generates responses to user queries but also interacts based on conversational context [2]. In early 2025, DeepSeek emerged as a groundbreaking development, rapidly becoming the focus of the AI field. Large language models, the most typical technical means of AIGC, primarily benefit from massive

datasets, algorithms (mainly the Transformer algorithm), and powerful computing capabilities [3]. The most important reason for ChatGPT' s widespread attention is its introduction of RLHF (Reinforcement Learning from Human Feedback), which incorporates human evaluation as guidance, enabling AI systems to more accurately capture human intentions and preferences, thereby generating content that better aligns with human needs, cognition, and values. Beyond language understanding models like ChatGPT, AIGC encompasses various categories including image, code, audio, and video generation [4]. Through large-scale data learning and training, AIGC can perform tasks across multiple domains with only appropriate adjustments and revisions.

Publishing houses, as traditional media institutions, possess inherent advantages in information dissemination and should embrace this trend, positioning themselves at the forefront of technological development to accelerate the integration of knowledge production with AI and strengthen international exchanges and cooperation. In the academic journal field, the rational application of AIGC for article polishing, processing, and optimization can enhance academic quality to a certain extent, though issues such as data security, copyright, and academic misconduct remain concerns. A search in the CNKI database using the keyword "generative artificial intelligence + academic journals" (conducted on November 10, 2024) yielded 22 relevant documents, indicating that research on AIGC technology applications in academic journals is gradually maturing. Based on this literature, this paper focuses on analyzing the current application status and challenges of AIGC in academic journal publishing and proposes targeted countermeasures.

1. Applications of AIGC in Academic Journals

AIGC' s impact on academic journals is multifaceted. By generating content through AI, it can provide writing ideas for users, capture social hotspots, help academic journals improve review efficiency, optimize editorial and publishing workflows, and leverage its powerful data analysis capabilities to achieve precise promotion of publications, accelerate academic knowledge dissemination, and promote interdisciplinary communication.

1.1 AIGC Applications for Authors

During the content creation stage, AIGC technology can assist users in literature reading by helping them filter important information and improve reading efficiency. Based on input keywords or sentences, AIGC can generate multiple writing suggestions and ideas to inspire users. It can simulate numerous academic documents to generate new articles that comply with academic norms and requirements. This is not simple copy-pasting but rather creative generation through understanding and learning, organically combining information from multiple knowledge domains. Users can then modify and optimize this content, greatly improving writing efficiency [5]. Additionally, the technology

can automatically recommend relevant references based on the topic of the creative content. Therefore, AIGC is not merely a "creative assistant" but also helps creators identify correlations between literature sources, providing richer and more systematic background knowledge to achieve efficient knowledge production. It can also adjust the style and format of creative content according to different purposes, and creators can use AIGC for journal matching, peer review tracking, and originality checking before submission.

1.2 AIGC Applications for Editors

1.2.1 Topic Planning and Manuscript Solicitation Editors can utilize AIGC technology for topic planning. By inputting specific topic instructions, AIGC can quickly and accurately generate relevant topics, from which editors can select those with strong relevance, feasibility, and forward-looking potential. When prompted with "Please generate an outline for [topic name] and list key points," AIGC automatically retrieves information to generate outlines and key points. Editors can then add, delete, or adjust these outlines based on their experience and the journal' s specific requirements to create more complete frameworks and optimize topics. Simultaneously, by analyzing authors' articles, citations, and collaboration networks, AIGC can identify potential authors related to specific topics, thereby improving the efficiency and success rate of manuscript solicitation, discovering creative talent, and expanding the author pool [6-8].

1.2.2 Peer Review AIGC technology can be applied in intelligent peer review assistance systems to help reviewers examine articles quickly and accurately. By rapidly analyzing the overall content and generating targeted review comments based on specific requirements, AIGC can provide more comprehensive revision suggestions for authors. By learning from large volumes of review comments, AIGC can master review standards across different fields and journals, thereby generating more professional review opinions [9]. First, AIGC can automatically generate concise abstracts based on full-text content, helping reviewers quickly understand the main content and research findings, and rapidly exclude manuscripts that do not meet journal requirements, thus improving review efficiency. Second, it can automatically generate corresponding charts and data visualizations based on paper data and conclusions, providing reviewers with additional information about research results. Third, by comparing paper similarity with existing literature, it can automatically detect academic misconduct such as plagiarism and data fabrication. Human energy and focus are limited, whereas machines do not have these constraints, making AIGC suitable for handling many repetitive review tasks [10]. This not only improves editorial efficiency and review quality but also, more importantly, liberates editorial productivity to some extent.

1.2.3 Editorial Processing and Refinement During editorial processing, AIGC leverages its powerful database system to intelligently process and polish

articles through automated review, evaluation, revision suggestions, and knowledge error correction, significantly improving proofreading efficiency [11]. First, AIGC can automatically optimize publication content by identifying and improving logical structure through data analysis, making content more coherent and logically sound. Second, the technology can automatically check spelling errors, grammatical mistakes, and punctuation usage, making appropriate corrections based on context. Third, AIGC can identify sensitive words in relevant content to avoid ethical or moral issues, thereby improving editorial and proofreading efficiency and professionalism. Finally, AIGC can review article content and provide corresponding feedback, detect and correct professional knowledge errors such as statistical data errors and technical principle expression mistakes, and assist editors in version comparison to check revision effectiveness and ensure problem resolution [5,12].

1.3 AIGC Applications for Readers

The ultimate purpose of publishing is to achieve knowledge services. Through deep learning and analysis of professional books and papers, AIGC can extract key knowledge points and present them to users in easily understandable formats, making learning more efficient—particularly beneficial for professionals who need to quickly master large amounts of information. AIGC can also analyze reader data to identify areas of interest and push appropriate content to readers, enabling precise promotion and recommendation to improve knowledge service efficiency. AIGC' s applications extend beyond traditional media to social media, search engines, video platforms, and other channels, achieving multi-channel and multi-platform content distribution to accelerate academic knowledge dissemination. Furthermore, AIGC plays an increasingly important role in interdisciplinary communication. As technology advances, AIGC not only deepens its application in traditional fields but also promotes innovative collaboration between different disciplines. By analyzing and simulating large datasets, AIGC can provide universal data analysis tools and methods for different disciplines and transform complex, difficult data into more intuitive formats such as graphics, charts, and animations, making information immediately comprehensible and facilitating interdisciplinary understanding.

2. Challenges Posed by AIGC Technology

While AIGC technology can assist authors, editors, and reviewers in completing multiple tasks in the academic journal field, it inevitably brings issues such as content distortion, unclear responsibility attribution, and copyright disputes, profoundly impacting academic journal publishing.

2.1 Risks of Spreading False Academic Information

Although AIGC appears creative on the surface, its generated content is essentially a reintegration of learned data. If the training data contains biases,

AIGC may produce issues with accuracy and reliability when creating academic papers. Additionally, papers generated using AIGC technology may carry risks of plagiarism and fabrication. Due to the immaturity of AIGC technology, its unverified generated content can produce seemingly plausible but inaccurate information—a particularly sensitive issue in the publishing industry. If such content is directly published, it will transmit erroneous information to the general readership, seriously damaging the credibility of the publishing industry and reducing publication quality [14].

2.2 Copyright Ownership Issues

AIGC can create various forms of content, including text, music, and paintings, raising copyright ownership questions during the creative process. However, no clear legal norms currently govern copyright ownership of AIGC-generated content [15]. Article 11 of China' s Copyright Law stipulates: "Unless proven otherwise, a citizen, legal person, or other organization that affixes their name to a work shall be the author." Since AIGC is neither a natural person nor a corresponding organization, it lacks legal subject qualification. Furthermore, the primary characteristic of a "work" is originality, whereas current AIGC outputs are constrained by developers' pre-input algorithms and data, lacking so-called "originality." Moreover, before public release, AIGC-generated content depends on human selection and optimization. Therefore, such content cannot be recognized as a "work" protected under Copyright Law, making copyright ownership difficult to define.

2.3 Liability Attribution Issues

Although AI systems can rapidly process large amounts of data, they may lack human nuanced judgment and contextual understanding in certain aspects. When machines partially replace human labor in daily editorial work, existing accountability mechanisms become ineffective because previous norms and systems in the editorial publishing industry primarily addressed human behavior. Applying AIGC technology in content production for the publishing field can lead to ambiguous delineation of responsibility between humans and machines.

2.4 Privacy and Data Security Risks

AIGC technology application requires massive amounts of data, including users' personal identity information and behavioral data. If such data is leaked, abused, or inadequately protected during storage and transmission, it will inevitably trigger data security and user privacy issues.

3. Response Strategies

In response to the challenges and concerns brought by AIGC technology, this paper proposes relevant countermeasures from two perspectives: journal publishing institutions and individual editors.

3.1 At the Journal Publisher Level

3.1.1 Establishing AIGC Usage Standards and Regulations With the rapid development of AIGC technology, ensuring its standardized application and healthy development has become a global concern. The low usage threshold of AIGC technology has led to audience abuse and misuse; therefore, relevant departments should establish and improve AIGC usage norms and standards, clarifying its scope of use and responsible parties to enhance technological credibility and security [6]. Currently, the "Interim Measures for the Management of Generative Artificial Intelligence Services" represents China' s first normative policy specifically targeting AIGC technology. Journal publishing institutions should formulate AIGC usage norms and ethical guidelines tailored to their units, clarifying compliance boundaries for content generation methods and precautions during use. These guidelines should include how to identify and handle false information, ethical considerations, and copyright attribution issues, with key emphasis on ensuring transparency and feasibility while adapting to continuously evolving emerging technologies and new environments. Additionally, publishing authorities can increase policy support, such as incorporating AIGC usage indicators in annual journal verification and social benefit assessment evaluations, and actively promoting the rational application of AIGC technology in academic journals by including AI applications in relevant publishing integration development effectiveness awards and evaluations.

3.1.2 Establishing Interdisciplinary Training Teams and Enriching Training Content Applying AIGC technology in academic journals involves not only computer science but also requires integration with professional journal publishing knowledge. Establishing interdisciplinary training teams enables participants to learn more professional knowledge through collaborative teamwork. Traditional training content primarily covered foundational publishing knowledge and practical affairs; however, in the digital era, journal publishing institutions should arrange more AIGC-related training for editors, including new AIGC technologies, copyright protection for AIGC outputs, data security, and ethical awareness cultivation, thereby broadening editors' knowledge and perspectives and helping them understand AIGC' s characteristics, advantages, limitations, and current application status across various disciplines and fields, particularly new developments in academic journal publishing.

3.1.3 Encouraging Staff Development and Strengthening Talent Cultivation Strengthening international exchanges and cooperation, establishing AI technology talent reserves, and cultivating interdisciplinary talents who understand both technology and academia will help draw on advanced foreign technologies, increase R&D investment, and develop more intelligent and efficient processing technologies to jointly address AIGC challenges.

3.1.4 Promoting Technological Innovation and Integration Actively exploring the deep integration of AIGC with academic journals, such as de-

veloping intelligent topic planning systems and intelligent peer review systems, can improve the intelligence level and efficiency of editorial publishing. Simultaneously, we must pay attention to new challenges brought by technological development and adjust and improve response strategies in a timely manner.

3.2 At the Editor Level

3.2.1 Enhancing Professional Competence and Skills As the saying goes, "To forge iron, one must be strong oneself." Nowadays, AIGC provides diversified development directions for academic journals. While this technology can assist editorial work, it cannot replace editors. With large-scale AIGC application, the information environment faces severe challenges regarding authenticity and credibility. Journal editors must uphold professional ethics and correct political orientation, strictly review and verify the reliability and scientific nature of generated content, and serve as gatekeepers for every workflow [16]. They should learn and understand AIGC principles to improve their ability to identify false information while focusing on AI industry dynamics and future development trends, understanding new technologies, applications, and concepts, establishing lifelong learning perspectives, and continuously improving their professional competence and skills to create more high-quality and meaningful publications for readers [17].

3.2.2 Improving AIGC Technology Application Capabilities The future does not belong to AI but to those who master AI technology. Therefore, while performing their duties, journal editors should adopt an inclusive attitude toward learning AI fundamentals to gain deeper understanding of AIGC working principles and application methods. Facing the impact of new technologies, editors need to continuously accumulate professional knowledge in relevant fields to identify the authenticity of generated content more quickly and accurately. Editors should actively read relevant literature to stay informed about AIGC' s latest developments, participate in AIGC-related training or seminars, engage in discussions with domain experts, ask insightful questions, and reasonably apply the technology in daily work. The relationship between editors and AIGC is mutually reinforcing and co-developing. In the human-machine collaborative process, editors should firmly maintain initiative, promote deep integration between editorial work and AI technology, leverage respective advantages, and achieve efficient collaboration [18].

3.2.3 Strengthening Publicity and Education Through various channels, editors should publicize the importance of academic integrity and the potential academic misconduct risks posed by AIGC to creators and readers, enhancing their awareness and self-discipline. Examples include publishing articles on academic integrity in journals and organizing academic lectures.

In the face of a complex and ever-changing work environment, stagnation means regression. As the era develops and technology advances, embracing change

is a challenge that every publishing professional and creator must confront. However, any emerging technology is a double-edged sword. Applying AIGC technology in academic journals not only optimizes publishing workflows and promotes rapid academic knowledge dissemination but also provides new tools and resources for academic journals. Nevertheless, AIGC application also triggers discussions about academic information fabrication and liability attribution. Therefore, while actively embracing AIGC, academic journals require publishing institutions to establish comprehensive usage guidelines and relevant regulations, and editors need to strengthen their professional competence and improve their ability to apply new technologies, working together to promote the high-quality and healthy development of journals.

References

[1] China Academy of Information and Communications Technology, JD Explore Academy. White Paper on Artificial Intelligence Generated Content (AIGC)[R]. Beijing: China Academy of Information and Communications Technology, 2022: 1.

[2] Luo Xiaojin, Chen Xiaohang, Yao Yao, et al. Application and Challenges of ChatGPT in Medical Teaching and Research[J]. Journal of Qiqihar Medical College, 2024, 45(11): 1080-1084.

[3] Cao Jianfeng. Toward Trustworthy AI: Governance Challenges and Responses for ChatGPT-like Generative AI[J]. Journal of Shanghai University of Political Science and Law (The Rule of Law Forum), 2023(4): 27-33.

[4] Chen Xingtong. Generative Artificial Intelligence and Scientific Publishing—Prospects and Recommendations for Publishing Work[J]. Media Forum, 2024(2): 81-83.

[5] Chen Zeqi, Huang Xiaofeng. Response Measures for Journal Publishing in the AIGC Era[J]. China Media Technology, 2024, 31(5): 72-75.

[6] You Kai, Wang Xue, Li Xinhong. Impact and Recommendations of Generative AI on Academic Journals: Taking ChatGPT as an Example[J]. Publishing Wide Angle, 2024(6): 1-4.

[7] Liu Fang. Strategies for Elevating the Value of Scientific Journal Editors in the Era of Rapid Generative AI Development[J]. Acta Editologica, 2023, 35(S1): 111-116.

[8] Wang Hui. Opportunities and Challenges for Academic Journal Development in the Context of Integrated Media[J]. China Media Technology, 2024, 31(5): 72-75.

[9] Yang Ya. Exploration of Application Scenarios of Generative AI in Scientific Journal Publishing[J]. Journal of News Research, 2024(2): 242-245.

[10] Cheng Si. Preliminary Exploration of AIGC Empowering Book Publishing

Work—From the Perspective of Book Planning Editors[J]. National New Book List, 2024(5): 110-112.

[11] Li Shi. Value, Risks, and Path Exploration of Generative AI Applied to Editing and Publishing[J]. Communication and Copyright, 2024(6): 49-51.

[12] Fan Lina. Exploration of Artificial Intelligence Application in Traditional Publishing Industry[J]. Communication and Copyright, 2024(6): 38-41.

[13] Luo Feining, Liu Zhuang, Xie Wenliang. Identity Challenges and Role Transformation for Editors in the AIGC Era[J]. Publishing Wide Angle, 2023(15): 65-69.

[14] Hao Lei, Wen Zhiqiang, Wang Fei, et al. Multi-domain Transformation and Challenges Brought by ChatGPT-like AI (Pen Discussion)[J]. Journal of Tianjin Normal University (Social Science Edition), 2023(4): 8-23.

[15] Luo Xiaohang. Opportunities and Challenges Brought by Generative AI Empowering Publishing[J]. China Media Technology, 2024, 31(9): 117-120.

[16] Hu Yue. Changes and Constants in Journal Editing Work in the AIGC Era[J]. Chongqing Administration, 2024(2): 95-97.

[17] Zhang Zhenhua. Building a Publishing Talent Team at a New Historical Starting Point—Impact and Opportunities of AIGC on Publishing House Editors in the Context of Intelligent Publishing[J]. Digital Publishing Research, 2023(S2): 21-24.

[18] Xie Fan. Role Reconstruction and Capability Reconstruction: Challenges and Responses of Generative AI to Editorial Work[J]. Editing Studies, 2024(3): 115-120.

Author Biographies

Dong Yongyang (1995-), female, from Xingtai, Hebei, bachelor' s degree, editor. Research interests: nursing science, editing, digital publishing.

Tan Feng (1986-), female, from Jimo, Shandong, master' s degree, associate editor. Research interests: nursing science, editing, digital publishing.

Jiang Lihui (1983-), female, from Qingzhou, Shandong, Master of Public Health, associate editor. Research interests: nursing science, editing, digital publishing.

Guo Mingxing (1962-), male, from Qingzhou, Shandong, bachelor' s degree, Deputy Editor-in-Chief of Qilu Nursing Journal. Research interests: clinical pharmacy, community elderly care, editing, digital publishing.

(Corresponding Editor: Li Jing)

Note: Figure translations are in progress. See original paper for figures.