Integration of Editorial Resources for Scientific Journal Post-prints in the Digital Age

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Abstract

While the digital era has brought challenges to the traditional publishing industry, it has also created greater development opportunities, particularly regarding publishing resources, which have become richer in content, more accessible, and more widely disseminated. Editorial work inherently possesses information-based attributes, and the transformation of publishing resources has endowed editorial activities with distinctive digital-age characteristics. For editors of scientific journals, it is imperative to leverage digital network tools comprehensively, integrating resources from multiple dimensions—including academic resources, audience resources, platforms, and new media—to create, analyze, produce, and disseminate high-quality academic content, thereby fostering journal development and advancement.

Full Text

Digital Era Scientific Journal Editor Resource Integration

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Abstract: The digital era has not only impacted traditional publishing but also created greater development opportunities, particularly regarding publishing resources—now richer in content, more accessible, and more widely disseminated. Editorial work inherently possesses information attributes, and the transformation of publishing resources has endowed editorial activities with distinctive digital-age characteristics. Scientific journal editors must fully utilize digital network tools to integrate resources across multiple dimensions—academic resources, human resources, platform and new media resources—to create, analyze,

produce, and disseminate high-quality academic content, thereby promoting journal development and progress.

Keywords: scientific journals; digital era; publishing resources; resource integration; media dissemination

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Scientific journals serve as both carriers and disseminators of research achievements and as platforms for scientific exchange. Since the early 21st century, rapid developments in digital technology and network science have prompted domestic scientific journal editors to gradually adopt digital office workflows, replacing traditional methods of transcription, postal mail, and "scissors-and-paste" editing. Distribution models have similarly shifted from print-only postal subscriptions to combined print and electronic online publishing. The storage, acquisition, and dissemination of various publishing resources have moved from offline to online, with rich content and more convenient, widespread distribution methods bringing significant transformation to scientific journal development. Consequently, scientific journal editors have begun to shift their work mindset. Editorial work inherently possesses information attributes, and this transformation of publishing resources has endowed editorial activities with distinctive digital-age characteristics. Editors have transitioned from passively waiting for submissions in their offices and completing fixed publishing tasks according to routine, to actively utilizing various resources, enhancing resource integration capabilities, planning publication content, building journal popularity, expanding promotional channels, and ultimately achieving the goals of improving publication quality and expanding journal influence.

1. Academic Resources—The Core Content

Content is paramount in journal publishing, and academic resources constitute the most critical component of scientific journal publication. The collection, possession, analysis, and selection of academic resources determine the quality and effectiveness of editorial activities. Academic resources primarily include: database resources such as physical database libraries and online databases like Web of Science and CNKI; academic website resources; electronic publication resources; organizational resources; and academic forum resources. From these, editors can obtain direct access to academic literature, news updates, research projects, and other information.

The digital era has made academic resource storage easier and acquisition faster and more convenient. Moreover, editors can leverage data platforms and related data processing software to conduct in-depth data analysis of digitalized academic resources. Based on this, editors can focus their mining and analysis on several key aspects: (1) Frontier and hot research directions, including current hotspots, past frontiers, and future research trends, enabling adjustments to journal solicitation directions and optimization of column settings to launch special issues and enhance journal influence; (2) High-level authors, including

renowned scholars and young elites, who are key targets for commissioned submissions and can significantly improve manuscript quality—establishing good relationships with them also forms the foundation for building journal popularity resources; and (3) National strategic needs. As Chinese scientific journals, we have an unshakable responsibility to contribute to national scientific and technological development. Journals should address national needs, particularly in strategically important and fundamentally weak areas, by building robust academic exchange platforms to promote continuous progress.

Simultaneously, editors possess content resources within their journal' s domain and can examine various aspects of their own publications, including thematic directions and author groups. By benchmarking against analysis results of relevant academic resources, they can clearly identify deficiencies and areas needing improvement, thereby planning publication content and enhancing journal resource value.

Furthermore, the digitization of academic resources provides powerful tools for academic ethics and integrity review in scientific journals. Although journal editors strictly implement the three-review system and peer-review system for each submission, the limitations of manual review inevitably lead to some academic misconduct, such as plagiarism, duplicate submission, redundant publication, and inappropriate authorship. Today, multiple organizations—including the International Publishing Link Association, CNKI, and Wanfang—have launched academic misconduct detection software based on digital databases. Some journals have integrated these detection tools into their submission and review systems for automatic plagiarism checks upon receipt and before publication. It is worth noting that check results should not be judged using simplistic threshold-based "one-size-fits-all" approaches. Editors must carefully review plagiarism reports and combine them with manuscript content for further discrimination, effectively preventing the publication of most academic misconduct while avoiding false positives.

2. Human Resources—Content Providers

A journal' s human resources primarily include author groups, readership, and editorial board expert groups. Authors are the source of journal content, ranging from industry-renowned experts to beginner students. While journals must treat all authors and their submissions fairly and impartially, they should also actively solicit contributions from outstanding authors to increase high-quality manuscript sources. Readership represents the audience for published journal content and constitutes the basic condition for editorial products to achieve market and social value. They convert their reading into citations that enhance journal influence while also serving as authors or potential authors. The editorial board expert group includes editorial board members, reviewers, and all professional groups providing guidance, consultation, and suggestions for journal development. Whether launching a new high-level journal or substantially improving an established one, editors must maintain good interactions with the

editorial board expert group and even invite them to participate in expert-run journals for in-depth academic content quality control. The editorial board directly guides and supervises the journal' s academic quality, making it significant for journal development. When selecting editorial board members, editors should consider not only discipline and institution distribution but also balance the ratio between "academic giants" and young scholars. While leveraging the academic prestige of established experts, they must also prioritize their availability and enthusiasm for the journal. Young scholars should be particularly valued and cultivated to develop their sense of shared growth with the journal. Naturally, expert groups are not limited to disciplinary specialists but also include publishing industry experts and peers. Only by continuously learning from others' strengths and grasping publishing industry development trends can editors broaden their editorial vision and advance journal development.

The prerequisite for fully utilizing human resources is establishing the journal' s own expert resource database. Digital submission and review systems provide tremendous convenience for manuscript storage, processing, and management, and their required account registration attributes also make them the primary and most common method for obtaining expert information—information that can be continuously accumulated. Additionally, editors can obtain rich expert information through literature and intelligence analysis using online academic resources. Journals with resources can also leverage professional technology companies to acquire expert information in bulk. Expert databases require continuous updating and expansion and must be managed dynamically.

Editors must also be observant and attentive in daily work, paying attention to various news developments and engaging in frequent exchanges with experts to identify promising young scholars. After establishing an expert resource database, editors must maintain active two-way interaction—not merely having editors understand experts while the experts remain unaware of the editors or even the journal. This requires editors to proactively maintain good relationships: actively visiting experts or research teams to understand their research dynamics and publication needs; actively participating in academic conferences to understand industry development trends and meet scholars; organizing academic activities such as conferences, training lectures, and meet-and-greets to invite experts to speak and build popularity; holding evaluation activities such as outstanding research achievements, excellent editorial board members, excellent papers, and excellent covers to motivate experts and authors; utilizing media platforms like WeChat official accounts to attract fans and readers; establishing groups on social platforms with different themes to create direct communication channels and increase popularity; and helping experts solve problems within their capacity, such as improving submission service experiences, sharing news information, publicizing research achievements, building exchange platforms, and releasing notification information.

3. Platform and New Media Resources—Producing and Disseminating Content

Digital-era publishing has long subverted traditional print media publishing models, achieving simultaneous publication of print and electronic versions, with some journals even completely abandoning print editions. Beyond collection, review, and commemorative functions, print editions' other characteristics have gradually been replaced by digitalization. Digital publishing represents not only changes in publishing methods and carriers but also transformations in presentation and dissemination modes.

3.1 Digital Online Publishing

In recent years, to secure priority publication rights and enhance journal competitiveness, enabling excellent research achievements to be displayed as quickly as possible, many journals have optimized manuscript processing workflows and shortened publication cycles while successively launching online-first or preprint publishing models. Under this approach, papers are published online after review and final approval but before formal production. Some publishing platforms have integrated production and release systems, enabling direct online publication immediately after single-article production to achieve seamless, standardized integration of production and release. Online publication terminals have also expanded from computers to mobile devices, allowing readers to read and share anytime, anywhere.

3.2 Diversified Content Display

After publication carriers shifted from paper to digital networks, paper presentation methods also expanded. In the early digital era, most journals simply presented abstracts and PDF full texts. PDF documents are typical unstructured files that only display page effects without specifying semantic meaning of text content, with fixed layout requiring readers to download and open them with readers. In recent years, Extensible Markup Language (XML) files have gradually become mainstream in journal publishing. They enable content analysis and knowledge indexing in electronic versions, achieving structuralization of all content including text, figures, and tables, ultimately presented as static web pages. They offer flexible layout, cross-platform and multi-interface publishing, convenient reading and retrieval, and can provide additional information. Meanwhile, displayed content has diversified beyond static text, figures, and tables. Some forms not easily expressed in traditional publishing—such as process documents and experimental data—can be implemented as enhanced publishing through supplementary materials. Text content can also be visually processed using videos, audio, and 3D animations to transform static publication content into dynamic models. Supplementary material content is not merely simple copying or introduction of papers themselves but can include experimental data, operation demonstrations, author interviews, related news, extended hot topics, etc., effectively integrated with papers to facilitate understanding,

enhance viewing interest, and attract readers, thereby improving dissemination effectiveness.

3.3 Multi-channel Promotion and Marketing

The advantages of network dissemination in the digital era—spanning time, large capacity, two-way interactivity, and multiple selectivity—have profoundly transformed how audiences receive information, completely changing the passive information reception model of traditional media audiences. Paper digitization and diversification, combined with network dissemination, have expanded promotional methods and channels from traditional subscription models to current promotion and sharing through official accounts, video accounts, social groups, social circles, and precision push after big data mining and artificial intelligence screening. Social platform promotion requires fully utilizing accumulated human resources, while big data precision push requires fully leveraging academic resources. During the promotion process, new human and academic resources are continuously absorbed, creating a virtuous cycle for editorial work.

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