

Application Practice and Reflections on Standard Operating Procedures in Scientific Journals (Post-print)

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Abstract

Objective: To prevent the loss of talent, technology, and expertise, further standardizing and unifying operational workflows is of paramount importance. **Methods:** This article analyzes problems existing in the scientific journal publishing process, systematically reviews the publishing workflow, identifies several specialized processes, integrates relevant industry standards and specifications, transforms the technical expertise accumulated by technical professionals over the years into publishing guidelines, and develops a standard operating procedure (SOP) manual for scientific journal publishing. **Results:** Through implementation of the SOP manual for scientific journal publishing, the publication quality of scientific journals and the work efficiency of technical professionals have been enhanced, while also augmenting the technological assets of publishers and reducing their operational costs. **Conclusion:** This article provides a novel approach for implementing SOP manual systems and improving the operational efficiency of publishers.

Full Text

Application and Reflection of Standard Operating Procedures in Scientific Journals

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Abstract:

[Objective] To prevent the loss of technical expertise and experience, standardizing and unifying operational workflows is critically important. **[Methods]** This paper analyzes existing problems in scientific journal publishing workflows, clarifies the publishing process, identifies multiple professional procedures, and

combines relevant industry standards to transform senior technical staff's accumulated experience into publishing guidelines, thereby establishing a Standard Operating Procedure (SOP) for scientific journal publishing. **[Results]** Implementation of the SOP has improved publication quality and professional efficiency, increased technical assets for the publishing house, and reduced operational costs. **Conclusion** This study provides a novel approach for implementing SOP systems and enhancing operational efficiency in publishing institutions.

Keywords: Standard Operating Procedure; scientific journal; editorial processing; publishing workflow

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Introduction

On May 28, 2020, the National Press and Publication Administration issued the *Regulations on Newspaper and Periodical Quality Management*, which establishes quality grading and assessment methods for newspapers and journals. Quality evaluation encompasses four dimensions: content quality, editing quality, publication format quality, and printing quality [?]. Editing quality forms the foundation of scientific journal quality and constitutes a crucial component of content development, making its improvement an essential requirement for high-quality journal development. Editing and proofreading represent a key procedural step in scientific journal publication—an indispensable and meticulous professional technical task [?]. This requires publishing professionals to process manuscripts according to established norms and promptly correct errors. Without professional proofreading mindset and sound editorial habits, publishing staff may easily violate quality management regulations, leading to declining journal quality.

Standard Operating Procedures (SOPs) are vital quality management tools in modern enterprises. Zhao et al. [?] integrated enterprise standards into operational procedures to construct SOPs and analyzed their implementation effects. Zhang [?] extended SOPs to power supply enterprise management, elaborating on their purpose and future development. Qiu [?] demonstrated that SOPs prevent improper operations and optimize procedural details, providing scientific basis for evaluating student performance. Lou et al. [?] identified core issues in power communication system maintenance and developed corresponding SOPs, achieving significant results and expanding standardized knowledge systems. In summary, based on lean production management theory, establishing comprehensive operational standards to unify procedures is critically important. Optimizing and solidifying workflows not only extracts professional knowledge but also yields significant social and economic benefits.

Currently, no documented applications of SOPs exist in scientific journal editing and publishing. Drawing from industrial implementation experiences, this paper analyzes major problems in scientific journal publishing, introduces SOP concepts, and describes the development process and implementation outcomes, offering new insights for high-quality development in the publishing industry.

1. Key Problems in Scientific Journal Publishing

1.1 Low Publication Quality Scientific journal publishing involves multiple specialized procedures where issues such as non-standard workflows, non-compliant text and graphics, careless editing, and inconsistent methodologies frequently arise. These problems disrupt publishing schedules, cause delays, and ultimately compromise journal quality and efficiency [?].

1.2 Loss of Technical Experience Due to the specialized nature of editorial work, scientific journals require comprehensive editor competencies. Excellent editorial teams need both theoretical instructors and experienced professionals [?]. When experienced staff leave, their technical expertise and know-how are lost, disrupting subsequent workflows and affecting publication continuity.

1.3 High Training Costs New assistant editors typically lack systematic publishing knowledge and practical skills. Training relies heavily on senior staff demonstrating and explaining processes based on personal experience, consuming significant resources and time while yielding slow skill development. Moreover, newcomers often prioritize immediate results over deep understanding of regulations and national standards, resulting in suboptimal learning outcomes.

2. SOP Overview and Development

2.1 SOP Overview Standard Operating Procedures, also known as standard operating protocols, quantify operational details into unified standards that serve as management guidelines. SOPs offer advantages including 固化操作经验、积累工艺知识等优点, 可进一步规范企业的生产和管理, 形象化和标准化地展示出生产作业流程。[13] Most enterprises now maintain SOP management systems as core components of their quality management frameworks. SOP implementation enhances staff efficiency, and standardized operations constitute a primary element of modern enterprise management and knowledge management systems [?].

2.2 SOP Development Process Transforming accumulated editorial experience into systematic guidelines, we developed SOPs for scientific journal publishing based on our institution's actual conditions:

2.2.1 Establishing the Development Process

The SOP development workflow is shown in [Figure 1: see original paper]. First, main processing operation diagrams were created according to publishing stan-

dards, followed by sub-operation diagrams and corresponding appendices. Standard operating procedures were then developed for each control point.

2.2.2 Defining Operational Steps

The publishing workflow was analyzed to identify multiple professional procedures. Each procedure was refined and standardized to determine control points requiring SOPs, with detailed operational steps listed accordingly.

2.2.3 SOP Document Design

SOP documents consist of three main components: cover page, main body, and revision records.

The cover design is shown in [Figure 2: see original paper], containing the journal's full name and logo, project title, department, date, and version number. SOPs require signatures from the developer, reviewer, and approver—typically senior publishing professionals.

The main body includes the SOP title, document number, page information, and detailed descriptions. For complex procedures, textual descriptions are supplemented with images to visualize and quantify specific steps, as illustrated in [Figure 5: see original paper].

The revision record design is shown in [Figure 6: see original paper], comprising revision date, document number, revision details, and remarks.

Drawing from standards such as *Publishing Terminology*, *Proofreading Principles*, *Proofreading Procedures*, *Proofreading Methods*, *Proofreading Symbols*, *Common Proofreading Techniques*, *Specifications for Illustrations, Tables, Units, and Numbers*, *Common Drawing Standards*, *Information and Documentation—Bibliographic References*, *Journal Editing Quality Error Rate Calculation Methods*, *Common Editorial Errors*, and *Scientific Journal Error Prevention*, senior staff's experience was transformed into systematic SOPs. [Figure 3: see original paper] shows a partial workflow table, and [Figure 4: see original paper] displays a sample table of contents.

3. SOP Implementation Outcomes

3.1 Improved Publication Quality SOP implementation is a continuous refinement process that accumulates and preserves professional knowledge, serving as an important problem-solving tool. As training materials for new employees, SOPs enable standardized operations, accelerating onboarding from approximately six months to three months. This rapid skill acquisition enhances both individual capabilities and journal quality.

3.2 Increased Technical Assets Editorial expertise is crucial for journal development. Without standardization, valuable experience—such as problem-solving methods and proofreading techniques—leaves with departing staff, causing recurring issues. Documenting this expertise in SOPs transforms intangible knowledge into tangible technical assets for the publishing house.

3.4 Reduced Training Costs New employees typically require six months to master publishing workflows and standards. With SOPs, proficiency can be achieved in approximately three months, saving at least three months of salary costs and reducing expenses for external training programs.

3.5 Enhanced Work Efficiency Senior staff previously spent at least six months mentoring newcomers. With visual, easy-to-understand SOPs, training time is reduced by approximately three months, freeing senior staff for other tasks. New employees' learning time decreases from six months to three months, reducing note-taking and trial-and-error costs while improving overall efficiency.

Conclusion

As scientific journals assume greater social responsibility, publishing professionals face various challenges in workflows and management. Establishing a standardized operational system enables scientific, institutionalized, and orderly development. Standardization improves both efficiency and quality in editorial processing. By promoting standardized operations and dynamically recording non-compliant practices, SOPs ensure robust execution and facilitate stable, efficient development in science communication.

References

- [1] Xue B. *Regulations on Newspaper and Periodical Quality Management* effective from May 28, 2020 [J]. *Acta Editologica*, 2020(3): 273.
- [2] National Publishing Professional Qualification Examination Office. *Publishing Professional Practice · Intermediate* [M]. Shanghai: Shanghai Lexicographical Publishing House, 2011: 74.
- [3] Zhao J, Sun S, Cui Y. Practice and reflection on developing operating instructions [J]. *Human Resource Management*, 2013(5): 126.
- [4] Zhang Y. Standardized operating instructions and their application in power supply enterprises [J]. *Market Weekly (Theoretical Research)*, 2012(3): 133-134, 22.
- [5] Qiu J. Analysis of SOP' s role in CNC machine tool training [J]. *Journal of Jilin Engineering Normal University*, 2018(6): 105-108.
- [6] Lou P, Sun W, Zhang Y, et al. Practice of standardized operating instructions for power communication facility maintenance [J]. *Journal of Huzhou Normal University*, 2009(S1): 158-160.
- [7] Zheng J. Problems and solutions in scientific journal editing and proofreading [J]. *Tianjin Science and Technology*, 2019(10): 57-58+61.
- [8] Wang X. Issues requiring attention in academic journal editing under new standards [J]. *Journal of Hainan Tropical Ocean University*, 2020(1): 59-71.
- [9] Wu J. Analysis of editing quality issues in scientific journals [J]. *Chinese Journal of Scientific and Technical Periodicals*, 2010(3): 372-373.
- [10] Guan Y. Problems and solutions in integrated editing and proofreading practice [J]. *Digital Media Research*, 2017(5): 31-34.

- [11] Pang D. Discussion on reference editing quality under “2015 National Standard” –case study of 11 core editing/publishing journals [J]. *Journal of Guangxi College of Education*, 2020(3): 20-28.
- [12] Jia J, Zhang X. Research on training paths for Chinese scientific journal editors [J]. *China Media Technology*, 2022(8): 50-52+56.
- [13] Mao S, Liu C. Discussion on standardized operations at GAC Toyota [J]. *Modern Team*, 2018(10): 14.
- [14] Yi X, Chen W. Application and implementation of standardized operations in enterprises [J]. *Automobile Applied Technology*, 2018(3): 169-171.
- [15] Bian L, Ma J, Shi B, et al. Practice of integrated excellence performance and lean management for scientific journals [J]. *China Media Technology*, 2021(9): 23-25+107.

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