Optimizing Electronic Journal Display and Identification: A PIE-J Protocol Analysis of Postprints

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Abstract

[Objective/Significance] Through a systematic analysis of PIE-J, this study aims to enhance awareness and understanding of PIE-J in China, encouraging collaboration among stakeholders across the electronic journal supply chain to optimize electronic journal metadata and resolve the long-standing issue of electronic journal discoverability that has troubled all parties. [Method/Process] Through inductive and case analysis methods, this paper examines the formulation background, significance, main content, application status of PIE-J, and its implications for the presentation and identification of Chinese electronic journals. [Result/Conclusion] PIE-J provides detailed guidelines for the identification of electronic journal metadata through concise language and vivid examples, which can improve open linking quality, enhance user efficiency and accuracy in locating journal articles, and further refine and develop electronic journals. Given that China has not yet promulgated standards for electronic journal identification, if Chinese electronic journal publishers or suppliers can optimize electronic journal metadata by referring to PIE-J, it would significantly benefit them by enhancing product competitiveness and facilitating market expansion both domestically and internationally.

Full Text

Preamble

Optimizing E-Journal Presentation and Identification: An Analysis of the PIE-J Recommended Practice

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Abstract

[**Purpose/Significance**] This article provides a systematic analysis of PIE-J, aiming to increase awareness and understanding of this recommended practice in China. It calls for collaboration among all stakeholders in the e-journal supply chain to optimize e-journal metadata, addressing the long-standing problem of difficult e-journal discovery. [**Method/Process**] Through induction and case analysis, this study examines the background, significance, main content, and application of PIE-J, as well as its implications for e-journal presentation and identification in China. [**Result/Conclusion**] PIE-J offers detailed guidance on e-journal metadata identification through concise language and illustrative examples, which can improve open linking quality, enhance user search efficiency and accuracy for journal articles, and further develop e-journals. Given that China has not yet issued e-journal identification standards, Chinese e-journal publishers or suppliers who reference PIE-J to optimize their metadata will significantly enhance their product competitiveness and promote market development both domestically and overseas.

Keywords: electronic journals; metadata presentation; journal identification; NISO
Classification Number: G254

Many researchers have likely experienced this frustrating scenario: holding complete citation information for a journal article (title, journal name, volume, issue, and page numbers), yet being unable to locate the article through either discovery systems or database journal navigation. After repeatedly verifying the citation details, the article remains elusive. Only after extensive assistance is the article finally found, revealing that the journal had changed its title. During digitization, the publisher had reorganized articles originally published under the old title under the new title page, causing the open linking system to fail in making correct matches. This phenomenon reflects the retrieval obstacles caused by non-standardized e-journal metadata presentation and identification by publishers or suppliers—problems that negatively impact not only users but also increase librarians' consultation workload, reduce e-journal usage rates, damage database vendor satisfaction, and even lead to subscription cancellations. All parties in the e-journal supply chain can become victims of these issues.

In response, NISO (National Information Standards Organization) released the *Recommended Practice for the Presentation and Identification of E-Journals* (hereinafter referred to as PIE-J) in 2013, aiming to provide unified standards for e-journal metadata presentation and identification, thereby promoting long-term access to e-journal content. Since its publication, PIE-J committee members and other researchers have published articles in relevant American journals, focusing on PIE-J's main content and significance, its positive role in improving e-journal access, and comparisons with ISO standards, all of which have

contributed to its popularization.

Currently, China lacks unified practical guidance standards for e-journal presentation and identification. Although domestic scholars have paid attention to OpenURL since 2003, and some studies have discussed the important impact of e-journal metadata quality on open linking quality, there has been no further specialized discussion on e-journal metadata quality and standards. Moreover, since PIE-J has not been officially introduced and translated domestically, no specialized analysis of this American e-journal presentation and identification standard exists in China. Therefore, this article systematically analyzes PIE-J to increase domestic attention and understanding, encouraging Chinese e-journal publishers and suppliers to attach greater importance to metadata standardization. It calls for collaboration among domestic e-journal supply chain stakeholders to optimize e-journal metadata, improve open linking quality, and solve the persistent problem of difficult e-journal discovery.

2. Background and Significance of PIE-J

The development of digital information technology has profoundly transformed journal publishing and revolutionized how journals are read and used, making e-journals essential reference materials for academic research. To help researchers accurately locate literature resources, OpenURL and reference linking service systems (CrossRef) have emerged, along with various resource discovery systems. However, these systems rely on e-journal metadata to function properly. As one study noted, "If e-journal content suppliers do not display the original journal title on both their websites and knowledge base title lists, OpenURL link resolvers cannot provide full-text copy links." EBSCO information services staff have similarly emphasized that accurate presentation of original titles and their scope is crucial for the success of linking, listing, and discovery tools.

As serial publications, journals inevitably experience title changes and modifications to format and other publication information during their development. If e-journal publishers or suppliers fail to properly display and handle this metadata on e-journal pages, it can lead to linking failures or prevent discovery systems from making correct matches, ultimately affecting users' ability to access journal articles. Therefore, standardizing how publishers and suppliers present and identify e-journal metadata is a critical step in improving open linking quality and an urgent issue for the further development of e-journals.

Against this backdrop, in 2010, librarians from the University at Buffalo and representatives from Springer established a working group on e-journal presentation and identification to promote unified standards. The group gradually expanded to include librarians, publishers, subscription agencies, platform providers, CrossRef, the U.S. ISSN Center, indexing services, and digital archiving organizations. Through joint efforts, the working group's resolution was approved by NISO's Business Information Topic Committee, and in 2013, NISO officially published PIE-J to provide guidance for e-journal publishers and con-

tent suppliers, standardize metadata presentation, improve user search efficiency and accuracy, and address long-standing problems caused by non-standardized e-journal metadata identification.

3. Analysis of PIE-J's Main Content

PIE-J consists of three parts: the main text, appendices, and references. The main text includes a preface, Chapter 1 (Introduction), and Chapter 2 (Recommended Practice). The preface briefly explains the background of the recommended practice, Chapter 1 clarifies its purpose and scope and defines 22 specialized terms, and Chapter 2—the core of PIE-J—provides specific regulations on e-journal metadata presentation and identification from seven aspects: title and citation information, title changes and title history, ISSN, numbering and chronology systems, publication information, content access, and preservation of digital-to-print content.

Compared with other e-journal standards, PIE-J's most distinctive feature is its use of 32 examples in Appendix A to provide practical guidance on e-journal identification. These examples are screenshots from publishers' or suppliers' websites (used with permission) that demonstrate questionable aspects of e-journal presentation through annotations or comments, making PIE-J highly practical for direct application by publishers and suppliers. The main content can be summarized as follows:

3.1 Identification of E-Journal Metadata After Title Changes

Non-standardized metadata identification after title changes is a primary cause of access failure. While title changes occur during journal development, some publishers—due to oversight, convenience in organization, or market considerations—reorganize articles originally published under old titles under new titles during digitization. This creates "dead links in citation information, preventing students and researchers from accessing needed articles," becoming the most significant "pain point" in e-journal presentation.

To address this, PIE-J provides guidelines through two chapters: "Title and Citation Information" and "Title Changes and Title History." PIE-J emphasizes that preserving original titles and citation information is crucial for users seeking complete full texts. First, the full journal title should be displayed prominently, clearly, and consistently on all content pages, with print, electronic, and CD-ROM versions using the same title. Second, for journals with title changes, articles, issue numbers, volume numbers, and dates should be associated with the title used at the time of publication. When building "citation" functions, use the title, volume, issue, and date from when the article was published. Articles under original titles should not be reorganized under current titles to avoid confusion. Third, title changes should not be arbitrary but based on changes in journal content or scope. Journals with title changes should display former titles prominently on table of contents pages and article first pages to provide

clues for users searching for articles (see Figure 1 [Figure 1: see original paper]).

3.2 Clear Presentation of Title History

Title history provides important guidance for researchers searching for journal articles. PIE-J repeatedly emphasizes that journals with complex title histories should provide title history links and clear lists including complete titles, publication date ranges, and ISSNs for current titles. To facilitate article searching and help publishers organize complex title histories of acquired journals, PIE-J integrates various channels for obtaining title history:

First, query title history through ISSN Centers. The ISSN International Centre in Paris and 89 national ISSN centers worldwide manage and assign ISSNs for serial publications. The *ISSN International Register* lists all ISSNs assigned by ISSN centers and is an important source for global serial publication identification. The online database is continuously updated with nearly 130,000 corrections and modifications annually. Searching by ISSN yields data including title, ISSN, publication frequency, language, publisher, place of publication, other formats, and former titles if applicable.

Second, verify title history through scanned documents of back issues. This is particularly relevant when publishers acquire journals from other publishers and may be unfamiliar with the title history. Covers, editorial statements, and other sections of back issues may display former titles or include specific notes about title changes.

Third, use the Ulrichsweb serials directory. ProQuest's Ulrichsweb database is an authoritative serials bibliography database providing detailed publication information for over 330,000 journals across 950 disciplines. Searching by title or ISSN easily retrieves detailed publication information including title history. However, as a subscription database, it is inaccessible to publishers or researchers without access.

Fourth, use WorldCat's xISSN service. WorldCat is OCLC's online union catalog containing bibliographic data from 10,000 libraries worldwide. The xISSN service allows users to input a serial's ISSN to retrieve related ISSNs and other metadata, including journal history. Non-subscribers can submit 1,000 queries daily, while OCLC cataloging members can use it free of charge. However, PIE-J notes that xISSN relies on library contributions to WorldCat, so its accuracy and completeness cannot be fully guaranteed.

Finally, query title history through library catalogs. Library cataloging records typically contain extensive publication information. PIE-J suggests that some library catalogs can provide additional useful information unavailable through xISSN. As one of the most comprehensive library catalogs, the Library of Congress catalog is PIE-J's top recommendation. PIE-J demonstrates the search process in the Library of Congress catalog, which can yield basic journal information including holdings, first issue number and date, and detailed biblio-

graphic information such as publication frequency, former titles, and availability of different carrier versions. The limitation is that it depends on the library's collection scope, sometimes requiring consultation of multiple library catalogs for comprehensive coverage.

3.3 Providing Accurate E-Journal ISSNs

The ISSN (International Standard Serial Number) is a digital identification code for serial publications established under ISO 3297. In 2012, NISO's IOTA Working Group surveyed 24 major database vendors on OpenURL element weighting and found that ISSN carries substantial weight across vendors, averaging 88.5%. In Elsevier, Embase, and JSTOR, ISSN weight reached 100%. The higher the weight of an element in OpenURL, the greater its impact on linking success. This means that even if other metadata such as title, volume, or publication date are inaccurate or non-standard, as long as the ISSN is updated, OpenURL can still correctly match and locate the full text. Conversely, inaccurate ISSN representation likely increases OpenURL linking failure rates. Researchers have stated that "inaccurate ISSN information has become a major obstacle to accessing e-journal articles."

Current e-journal ISSN problems include: using the same ISSN for different formats (print, electronic, CD-ROM); failing to label e-journals with ISSNs; and not updating ISSNs after title changes. According to cataloging rules used by most libraries, journals with title changes are cataloged as new bibliographic records, each requiring its own ISSN. If e-journals do not update ISSNs promptly, mismatches with library catalogs can affect user access and library e-journal management.

PIE-J recommends that print and electronic journals each have separate ISSNs, and that every major title change requires a different ISSN. Specifically: First, ensure each title used has its own ISSN and verify data with the appropriate ISSN center. Second, ensure each format has its own ISSN by applying to the relevant ISSN center. Third, display all ISSNs for the same title with detailed format annotations (e.g., ISSN XXXX-XXXX (print), ISSN YYYY-YYYY (online)). ISSN application and use are free, so new ISSNs do not increase publisher costs. ISSN centers also provide convenient application processes. For example, the U.S. ISSN Center requires publishers to notify the center before title changes to avoid issuing incorrect ISSNs; this notification serves as the application for a new ISSN following the same process as previous applications. Other publication information and frequency changes typically do not affect ISSN assignment.

3.4 Displaying Clear Numbering Systems and Preserving Original Publication Information

Inconsistent numbering systems represent another significant e-journal problem. Clear and concise numbering systems help researchers query and obtain literature and facilitate journal management by libraries and other collecting

institutions. PIE-J requires using simple, clear numbering systems when presenting new e-journals, such as "Vol. 1, No. 1 (2011)." Publication dates are essential for e-journals and must be indicated in the numbering system. To facilitate user searches, original numbering and chronology systems should be used during digitization rather than renumbering content according to new systems.

Additionally, some publishers do not scan all pages of print journals during digitization, retaining only main information such as tables of contents and articles while removing front matter, title pages, editorial messages, illustrations, or acknowledgments. This seemingly insignificant information actually provides important background for researchers to understand journal content and serves as important historical evidence of journal development.

Therefore, PIE-J emphasizes in its "Publication Information" chapter that to preserve journal history and editorial information, important information should be continuously displayed and retained on webpages. First, provide an "About the Journal" or "Journal Information" page including editors and editorial board members, ISSN, publisher name and address, sponsoring organization, scope and purpose, publication frequency, publication or copyright date, masthead information, errata and retraction policies, and, if possible, ethical guidelines and peer review status. Ensure this information is retained for all volumes. Second, e-journals should preserve non-article information unique to each issue, such as prefaces, postscripts, journal covers, or other issue metadata. PIE-J also suggests publishers provide links or contact information on e-journal pages for librarians to offer feedback on bibliographic history or title presentation.

3.5 Identifying Metadata from a User Access Perspective

PIE-J acknowledges that for actual and potential readers, the ability to discover full journal content is crucial for disseminating academic research information. However, "some publishers, while keeping core journal content unchanged, want to create an identity different from the print journal. Much identification information cannot be displayed clearly at a glance, creating more difficulties for inexperienced users and cataloging staff to understand this information." This undoubtedly contradicts the original purpose of e-journals, where facilitating user access to content should always be the primary principle of e-journal presentation and identification.

To help users successfully obtain needed articles, PIE-J recommends: First, e-journal publishers should provide display and search access for both current and former titles to ensure all titles on the webpage can be accessed through browsing lists and search functions. Second, clearly articulate all volume, issue, and publication date information. Third, provide a table of contents with errata on journal pages to facilitate browsing and understanding of current journal status. Fourth, where possible, indicate access methods for content that cannot be displayed or searched on e-journal webpages. For example, when current publishers do not hold copyright for older content, provide links to other accessible

URLs.

3.6 Preserving the Complete Print Journal Appearance as Much as Possible

PIE-J applies to both born-digital e-journals and digitized print journals. During print journal digitization, missing content pages should not halt the entire digitization project. PIE-J repeatedly emphasizes respecting journal history by digitizing original volumes or issues, front and back covers, and all content—including blank pages and advertisements. Journal advertisements may reflect the historical context of the period and constitute part of the journal's historical record and should be preserved.

As shown in Figure 2 [Figure 2: see original paper], PIE-J recommends digitizing all available content, clearly indicating missing portions even if current content is incomplete, to facilitate accurate supplementation when missing content is discovered later. Additionally, PIE-J encourages digitization staff to communicate with librarians and seek professional advice when necessary.

4. Promotion and Application of PIE-J in the United States

As a NISO recommended practice, PIE-J is not mandatory but provides industry guidance for e-journal publishers and suppliers to address access obstacles caused by non-standardized presentation and identification. Users may adopt or modify the practice to meet specific requirements. On March 25, 2013, NISO officially published PIE-J on its website with a free full-text download link.

Shortly after PIE-J's release, the PIE-J Standing Committee was established to provide organizational leadership for its promotion, with primary responsibilities including: continuously promoting PIE-J development; encouraging librarians to formally or informally introduce the practice to e-journal publishers and suppliers nationally and globally; answering PIE-J inquiries; and collecting relevant comments and information. The committee actively promotes PIE-J through multiple channels:

First, publishing articles to introduce and recommend PIE-J. Committee members have published articles in *NISO Information Standards Quarterly*, *The Serials Librarian*, and UKSG's *Insights* to introduce PIE-J.

Second, promoting through conferences. Committee members actively participate in national and international conferences such as NASIG, ER&L, ALA, scholarly publishing organizations, and UKSG annual meetings to introduce PIE-J. In 2013 and 2014 NISO open teleconferences, committee members gave specialized PIE-J introductions. In 2016, the CRS Collections & Technical Services Committee hosted a webinar inviting publishers, content suppliers, e-resources librarians, and metadata librarians to introduce PIE-J and demonstrate how it addresses difficulties in finding articles caused by title changes.

Third, promotion through the U.S. ISSN Center. The committee printed PIE-J brochures distributed at the U.S. ISSN Center to publishers applying for ISSNs.

Fourth, promoting and collecting feedback through surveys. The PIE-J committee distributed online questionnaires to librarians, publishers, and platform providers.

Fifth, promotion through librarians. Since publishers and suppliers are PIE-J's primary users, the committee encourages librarians to recommend PIE-J to their publishing partners. To facilitate librarian-publisher communication, the committee created sample recommendation letters for librarians to download and use.

Through these promotional efforts, PIE-J has become well-known and adopted by numerous publishers. Its full-text downloads grew from 1,000 shortly after publication to 9,007 in 2015—a ninefold increase in two years, indicating high public interest and reflecting how PIE-J meets e-journal publishing needs. In 2014, the renowned academic publisher SAGE announced a major initiative to present and identify its e-journals according to PIE-J recommendations.

In March 2015, the PIE-J Standing Committee conducted a survey on PIE-J application: 198 people responded, including 17% publishers/suppliers and 83% librarians. Among publisher/supplier respondents, 88% indicated understanding PIE-J; 69% had compared PIE-J recommendations with their own company's e-journal identification; and encouragingly, 53% had already made or planned to make changes to their online journal platforms based on PIE-J recommendations. Among librarian respondents, 65% had read PIE-J, and 13% had contacted publishers or suppliers using the sample letter provided on the PIE-J website to recommend adoption.

5. Implications of PIE-J for Chinese E-Journal Presentation and Identification

5.1 Problems in Chinese E-Journal Presentation and Identification

The issues PIE-J addresses in e-journal identification may also exist in Chinese e-journals. Therefore, it is necessary to examine and analyze the current state and problems of Chinese e-journal presentation and identification.

China's e-journal collection is growing rapidly, with users extending beyond national borders—many foreign libraries have purchased Chinese database products. However, China currently lacks unified practical guidance principles for e-journal presentation and identification, and different publishers or suppliers describe e-journal metadata differently, potentially affecting user experience and overseas promotion of Chinese e-journal products. Researchers from Tsinghua University Library analyzing major resource discovery systems noted: "Non-standardized metadata is currently the most serious problem in several mainstream discovery systems. Discovery systems acquire metadata through

diverse channels and complex sources, and current academic journal publishing platforms vary considerably, resulting in the same journal/article being collected and revealed by multiple platforms with different metadata description standards. This creates great difficulties in deduplicating massive metadata warehouse data." Thus, standardizing e-journal metadata presentation and improving metadata quality are fundamental to optimizing resource discovery systems.

Specifically, major problems currently existing in Chinese e-journal identification include:

First, inaccurate ISSN information. This manifests primarily as failure to update ISSNs after title changes and using the same ISSN for different titles. For example, *Traffic Medicine* [v.1 (1987)-v.17 (2003)] ISSN 1006-2440; *Chinese Journal of Traffic Medicine* [v.18 (2004)-v.20, no.2 (2006)] ISSN 1006-2440; *Traffic Medicine* [v.20, no.3 (2006)-] ISSN 1006-2440. The journal underwent a title change in 2004, but the publisher did not update the ISSN, undoubtedly affecting accurate article access.

Second, non-standard title presentation. Some journals change titles frequently without providing clear title history, with some never mentioning former titles at all. Articles originally under old titles are reorganized under current titles, making them unsearchable through discovery systems. For example, *Chengdu Medical Newsletter* (founded in 1975) changed its name to *Chengdu Medicine* in 1980 and to *Modern Clinical Medicine* in 2005. Searching the two major Chinese e-journal platforms CNKI and Wanfang reveals that neither database provides title history links on their e-journal pages. Although CNKI indicates a former title *Chengdu Medicine*, users cannot learn that the journal was named *Chengdu Medical Newsletter* from 1975-1980. Both databases place full-text links for all issues since 1975 (Wanfang only provides issues since 2001) under the current title *Modern Clinical Medicine*. This likely causes articles under the original title to become "invisible" in literature discovery systems, affecting users' ability to accurately locate full texts.

Third, discontinuous numbering systems or failure to preserve print journal numbering systems. This manifests as inconsistent numbering formats. For example, one journal's issue list shows two different formats: "1935 Issue 16" and "1935 Volume 5 Issue 3." Additionally, e-journals often fail to completely preserve original print numbering systems. For instance, an article page might show "1994 Issues 3, 4," while the e-journal page displays "1994 Z1 Issue, 1994 Z2 Issue" (Z1 and Z2 likely being abbreviations for supplements). These minor changes may confuse users over time.

Fourth, incomplete preservation of original journal information. Many Chinese e-journals are not scanned completely according to the original print appearance, with front matter, editorial messages, illustrations, and advertisements commonly missing. Some Chinese e-journals consist of only two page types: title/main publication information pages and article content pages. The title

page only includes title, publication date, ISSN, publisher, impact factor, and annual table of contents, while front matter, editorial messages, illustrations, and advertisements are not scanned—information that may become important reference material for researchers.

5.2 Improving and Optimizing Chinese E-Journal Presentation and Identification

As analyzed above, Chinese e-journal presentation and identification face similar problems that PIE-J aims to solve. The direct result is affecting users' ability to access journal articles, but in the long term, all parties in the e-journal supply chain may suffer. For Chinese publishers and suppliers, the lack of unified e-journal metadata standards also affects further domestic and overseas market promotion of Chinese database products. In 2012, CEAAL (Council on East Asian Libraries) held discussions on problems and difficulties foreign users face in accessing Chinese electronic resources. Multiple librarians reached consensus that language and cultural barriers, along with lack of standards, pose new challenges for Chinese electronic resources and complicate their management and discovery. Incomplete and inaccurate e-journal metadata affects foreign users' access to and use of Chinese electronic resources, and unified metadata standards are an effective way to address these access barriers.

PIE-J was developed through long-term attention and discussion by the American publishing and library communities. Following its recommendations can optimize e-journal metadata, improve article retrieval success rates, and benefit users, libraries, and publishers alike. China currently lacks unified metadata standards, and Chinese e-journal presentation and identification face similar challenges as American e-journals. PIE-J undoubtedly has important reference value for Chinese e-journal publishers and suppliers.

Referring to PIE-J, Chinese publishers or suppliers can optimize e-journal metadata identification in several ways: First, prioritize user access to e-journal articles as the fundamental guiding principle for presentation and identification, rather than focusing solely on page aesthetics or short-term efficiency. Otherwise, if users cannot successfully obtain needed articles, e-journals lose their fundamental value. Second, prohibit arbitrary title changes; changes should be based on content or scope modifications. When title changes occur, provide clear title history lists on e-journal main pages to offer clues for users and avoid retrieval obstacles. Third, provide accurate ISSN information for e-journals, with separate ISSNs for each title change and different formats. Fourth, provide clear and concise e-journal numbering systems. When digitizing print journals, preserve original numbering systems to avoid citation confusion caused by system changes. Fifth, when digitizing print journals, carefully consider content deletion and preserve original publication information and conditions as much as possible, including front matter, editorial messages, illustrations, and advertisements. These recommendations can be guided more intuitively through the e-journal page screenshots provided in PIE-J Appendix A.

As one of NISO's recommended best practices, PIE-J provides detailed guidance on e-journal metadata identification through concise language and illustrative examples covering title presentation, title history, ISSN information, and numbering systems. While PIE-J originated from improving user search accuracy and success rates for e-journal articles, it actually better balances and coordinates the interests of all parties in the e-journal supply chain and further improves e-journal development. As R. R. Reynolds from the Library of Congress noted: "By presenting and identifying e-journals according to PIE-J, publishers and database aggregators can benefit from higher click-through rates and service satisfaction; cataloging staff can better catalog e-journals; reference librarians can better guide researchers; databases and library catalogs can better interface, making OpenURL systems run more smoothly; and ultimately, researchers can more easily find needed articles." After several years of promotion and application, PIE-J has become well-known and recommended by many libraries and related organizations. If Chinese e-journal publishers or suppliers can reference PIE-J to optimize e-journal metadata presentation and identification, it will greatly enhance their product competitiveness and promote domestic and overseas market development. Librarians, particularly e-resources acquisition librarians, can also improve e-resources procurement quality by introducing and recommending PIE-J to database vendors during negotiations.

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Author Contributions

Xiang Jiali: Conceptualization, writing, and revision of the manuscript.
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The Analysis on the PIE-J to Improve the Presentation and Identification of E-Journals

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Abstract: [Purpose/significance] This article analyzes the system of PIE-J, hoping that Chinese can pay more attention to it and all stakeholders of the electronic journals supply chain can work together to optimize the electronic journal metadata. It aims at addressing electronic journals searching issues

plaguing stakeholders for a long time. [Method/process] This article analyzes the background, significance, main content, application of PIE-J and its enlightenment on the display and identification of Chinese electronic journal through induction, case study and other methods. [Result/conclusion] PIE-J provides detailed guidance on the identification of electronic journal metadata through concise language and image examples, which can improve the quality of open links, improve the search efficiency and accuracy of journal articles, and further improve and develop electronic journals. Under the circumstance that China has not yet issued the standard of electronic journal identification, if electronic journal publishers or suppliers in China can refer to PIE-J to optimize electronic journal metadata, it will greatly enhance the competitiveness of its own products and promote the development of both domestic and overseas markets.

Keywords: electronic journals; metadata presentation; journal identification; NISO

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