

Dilemmas and Solutions for University Libraries in Facilitating the Transition of Academic Journals from Subscription to Open Access Models: Postprint

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Abstract

[Purpose/Significance] The “double-dipping” issue in the open access process has drawn attention and sparked discussion among publishers, libraries, and researchers. In this context, this paper analyzes and explores a Chinese pathway for transforming academic journals from subscription models to open access models, aiming to raise awareness among university libraries regarding the “double-dipping” issue in the open access process and to provide insights for the transformation and development of literature resource construction in university libraries in the new era. [Method/Process] Through literature review and web-based investigation, this study systematically examines the necessity and feasibility of university libraries promoting the transformation of academic journals from subscription to open access models, reviews current practices in such transformations, analyzes and summarizes the dilemmas encountered by university libraries in this process, and proposes relevant recommendations for achieving this transformation. [Results/Conclusion] University libraries should conceptually recognize the importance of transforming academic journals from subscription models to open access models, incorporate comprehensive open access research as a key component of library literature resource construction, proactively conduct evaluation and investigation through university consortia, participate in national-level policy formulation, actively study pricing models, promote the implementation of relevant policies, and maximize the collaborative construction and sharing of scientific research achievements.

Full Text

The Dilemma and Way Out for University Libraries to Promote the Transformation of Academic Journals from Subscription Mode to Open Access Mode

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Abstract: [Purpose/Significance] The issue of “double charging” in the open access process has attracted attention and discussion among publishers, libraries, and researchers. Against this background, this paper explores the Chinese path for transforming academic journals from subscription mode to open access mode, aiming to draw university libraries’ attention to the “double charging” problem in the open access process and provide insights for the transformation and development of library literature resource construction in the new era. [Method/Process] Through literature research and network investigation, this paper analyzes the necessity and feasibility of university libraries promoting the transformation of academic journals from subscription mode to open access mode, as well as current practices in this transformation. It summarizes the dilemmas faced by university libraries in this process and proposes relevant recommendations for achieving the transformation. [Result/Conclusion] University libraries should recognize the importance of transforming academic journals from subscription mode to open access mode, regard comprehensive open access research as one of the important tasks in library literature resource construction, actively conduct evaluation and research in the form of university alliances, participate in national-level rule-making, actively study pricing models, promote the implementation of relevant policies, and maximize the co-construction and sharing of scientific research achievements.

Keywords: open access; academic journals; APC; subscription mode; resource construction

2 Literature Review

Current research on the transformation of academic journals from subscription mode to open access mode both domestically and internationally primarily focuses on two aspects: First, the attitudes and behaviors of publishing institutions toward open access publishing, such as research on article processing charge (APC) standards and open access publishing mechanisms of major international publishers like Elsevier, Springer, Taylor & Francis, Wiley-Blackwell, NPG, and open access journal publishers BMC, PLOS, Hindawi, and MDPI [12]. Second, case studies on subscription institutions’ implementation of relevant funding transformations, such as comparisons between the total APC funding required for comprehensive open access of journal articles and current journal subscription system investments [2], experimental models for transforming literature subscription funds into open publishing funds [13], and actions by

major scientific and technological countries' educational institutions, research institutions, funding agencies, libraries, and international organizations to implement large-scale academic journal open publishing transformations [14]. Overall, existing research mostly focuses on international perspectives, analyzing the impact of open publishing on library resource construction and clarifying the significance of transforming academic journals from subscription mode to open access mode, while paying insufficient attention to domestic practical issues. Therefore, this study takes domestic university libraries as the entry point to clarify obstacles in China's open access process and explore a Chinese path suitable for transforming academic journals from subscription mode to open access mode, providing practical references for university libraries' open access historical process and related issues.

3 The Necessity and Feasibility of University Libraries Promoting the Transformation of Academic Journals from Subscription Mode to Open Access Mode

3.1 The Necessity of Transformation

In the traditional academic journal subscription model, university researchers primarily obtain research papers through journal full-text databases purchased by libraries. Under the open access model, for fully open access journals, university researchers can freely access research papers without libraries needing to subscribe to entire journal databases. For hybrid open access journals, however, library subscriptions remain necessary. It is not difficult to see that academic journal publishers utilize the hybrid publishing model to charge universities substantial subscription fees while simultaneously collecting APCs from researchers for publishing open access papers, creating an unreasonable "double charging" problem that causes varying degrees of economic loss to both university libraries and researchers. Therefore, promoting the transformation of academic journals from subscription mode to open access mode is an inevitable choice for university libraries to save literature resource funds, improve fund utilization efficiency, and avoid publishers' "double charging."

3.2 The Feasibility of Transformation

University libraries possess both certain literature subscription funds and are positioned as professional information exchange service institutions serving education and scientific research [13], with a foundation of long-term cooperation and price negotiation experience with academic journal publishers. Compared with other university departments, university libraries are more suitable for promoting the transformation of academic journals from subscription mode to open access mode.

4 Related Practices of University Libraries in Promoting the Transformation of Academic Journals from Subscription Mode to Open Access Mode

As of June 16, 2020, 17 institutions in mainland China had signed the “OA2020” Expression of Interest [15]. Among these 17 institutions, only the Documentation and Information Center of the Chinese Academy of Sciences has reached agreements with publishers such as the Institute of Physics (IOP). According to the agreement between the Documentation and Information Center of the Chinese Academy of Sciences and IOP, APCs paid by Chinese Academy of Sciences researchers who published open access papers in IOP hybrid journals as corresponding authors in a given year will be deducted from the following year’s consortium subscription fees [14]. Research shows that no “double first-class” university libraries have signed agreements for transforming journal subscription fees into APCs, and few have conducted negotiations with publishers on this issue. Overall, there is a lack of practical experience in fund transformation.

Based on relevant agreements signed between foreign libraries and publishers, besides the deduction model adopted by the Chinese Academy of Sciences, there are currently three common models for transforming academic journals from subscription mode to open access mode: First, the offset model. For example, Waseda University in Japan signed a “Read and Publish” pilot agreement with the American Institute of Physics (AIP) Publishing. Under this agreement, APCs for all articles published by Waseda University corresponding authors in AIP hybrid journals are completely waived [16]. Second, the price reduction model. For example, The Royal Society reduces prices for open access articles in hybrid open publishing journals, with subscription prices for “Royal Society Package A” (containing physics and interdisciplinary articles) decreasing by 3%, “Royal Society Package S” (containing the complete scientific literature collection) decreasing by approximately 1%, and “Royal Society Package B” (containing physics and biological science articles) decreasing by 0.7% [17]. Third, the funding model. For example, the University of California Libraries automatically pay \$1,000 of the article processing charges for all University of California authors who choose to publish in PLOS journals. Authors without research funding can apply to the library for full payment of article processing charges to ensure that lack of research funding does not become a barrier for University of California authors to publish in PLOS journals [18].

5 Dilemmas Faced by University Libraries in Promoting the Transformation of Academic Journals from Subscription Mode to Open Access Mode

5.1 Policy Dilemma: International Academic Journal Publishers Have Not Yet Formulated Fee Transformation Policies for Domestic Universities

The most critical issue in open access is policy orientation [19]. China's open access policies are all directional policies lacking operable implementation details, especially fund management rules. Changes in researchers' demand for open access affect publishers' publishing methods. Publishers gradually recognize that open access has become a market demand, and abandoning open publishing means giving up an increasing number of authors, funders, and manuscript sources [20]. To meet the needs of more researchers and adapt to open access trends, publishers are gradually transforming their publishing models, providing different options according to different needs, and playing a certain role in promoting the development of open access. However, it is undeniable that this process involves coordinating the requirements and interests of all parties and brings new business models and operating methods. Subscription fee conversion clauses are not yet included in university library digital resource procurement consortium schemes. Thus, as the main body of "double charging," international academic journal publishers have not yet formulated fee transformation policies for Chinese universities.

5.2 Awareness Dilemma: Libraries Have Not Yet Recognized the Importance of Transforming Academic Journals from Subscription Mode to Open Access Mode

In December 2019, the author conducted a survey on the awareness of open access issues among some university libraries in China (referred to as "university libraries"), with 30 "double first-class" university libraries participating. The survey found that most university libraries have not recognized the importance of transforming academic journals from subscription mode to open access mode. Specifically, 30% of university libraries have little understanding of the "OA2020" Expression of Interest, 33.3% have little understanding of major publishers' open access publishing situations, 63.33% have little understanding of their own university researchers' open access publishing activities, and 43.33% have little understanding of the "double charging" problem in open publishing and the current status of transforming academic journals from subscription mode to open access mode. The situation where university libraries lack understanding of APC charging policies of some international publishers also accounts for more than 60%. The specific survey results are shown in Table 1 .

5.3 Funding Dilemma: Literature Funds Are Difficult to Support Large-Scale APC Expenses

Limited funding sources and unstable financial allocations make it difficult for university libraries to form continuous financial investment in open access. The continuous rise of journal subscription fees and constant exchange rate fluctuations pose severe challenges for university libraries even to maintain the continuity of existing academic journals. Under these circumstances, for university libraries to support open access on a large scale, they must first grasp the funds required for library subscriptions to academic journals and the number of open access papers published by their university authors and the APCs paid. Taking “double first-class” universities as an example, according to the “2018 Literature Resource Purchase Fee Statistics Table for 1,025 University Libraries” published by the University Library Committee [21], the total electronic literature purchase fees for “double first-class” universities in 2018 was 797,653,792.4 yuan (data from seven universities including Jilin University, Harbin Institute of Technology, Nanjing University, Chongqing University, Lanzhou University, National University of Defense Technology, and Xinjiang University have not been disclosed). Based on the author’s investigation of the allocation of electronic literature funds in “double first-class” university libraries, the proportion of foreign language electronic journals ranges from a minimum of 33.77% to a maximum of 59.6%, with an average of approximately 50%. Therefore, it can be estimated that the subscription fees for foreign language electronic journals in “double first-class” university libraries are about 398,826,896.2 yuan. To understand the number of open access papers published by researchers in “double first-class” universities in 2018 and the APCs paid, the author conducted a search using the Scopus database on January 13, 2020, limiting the document type to Article, access type to open access, publication year to 2018, and affiliation country/region to China, then screened and organized the results according to the “double first-class” university list. After summary statistics, the total number of open access papers published by “double first-class” universities in 2018 was 50,337. Based on publicly available charging policies from various academic journals, APC standards for open access papers vary by journal, and charging strategies differ among major academic publishers. Data from the OpenAPC platform [22] shows that the average APC price for academic journals in 2018 was 1,985 euros. To understand the overall funding situation for open access papers in domestic “double first-class” universities, the author conducted a preliminary estimation using the simplest method, assuming that the annual APC fees each university needs to pay to support academic journal open access = average APC price per paper \times forward exchange rate \times total number of open access papers published by the university’s researchers in the year. Based on a total of 50,337 open access papers, an average APC of 1,985 euros, and a one-year forward exchange rate of 7.8 [23], the total APC fees for open access papers that China’s “double first-class” universities needed to pay in 2018 is approximately $1,985 \times 7.8 \times 50,337 = 779,367,800$ yuan (data from Renmin University of China, Minzu University of China, Yunnan University, and Xinjiang

University have not been disclosed and were not included in the statistics). It can be seen that the funds invested by “double first-class” university libraries for subscribing to academic journals are far insufficient to support the APC investment required for large-scale open access publishing of academic journals.

6 The Way Out for University Libraries to Promote the Transformation of Academic Journals from Subscription Mode to Open Access Mode

6.1 Policy Way Out: Promote the Formulation and Implementation of Open Access Policies

From a macro perspective, under the new situation, libraries need national-level policy support to promote the transformation of academic journals from subscription mode to open access mode. Libraries should actively conduct evaluation and research in the form of university alliances, study and explore relevant policies, strengthen policy implementation, and ensure policies are implemented in detail and in practice. From a micro perspective, the development of each university library is also affected by its university’s policies. As the purchaser of resources, university libraries are not the main producers of academic papers and have certain limitations in promoting the transformation of academic journals from subscription mode to open access mode. Therefore, libraries need to unite with other departments such as university research management to promote the issuance of open access policies for researchers at their institutions. Meanwhile, university libraries themselves should incorporate research on the transformation of academic journals from subscription mode to open access mode into their key work and overall planning, especially integrating the conversion of subscription fees and APCs into overall consideration, promoting publishers to issue detailed fee transformation rules for Chinese universities, providing diversified transformation options for university libraries, and step-by-step promoting the transformation of academic journals from subscription mode to open access mode.

6.2 Awareness Way Out: Deepen the Concept and Understanding of Comprehensive Open Access

Libraries can only explore their own suitable paths by recognizing the importance of transforming academic journals from subscription mode to open access mode and continuously exploring and researching reasonable methods of fund utilization. Open access does not equal free access. Many publishers utilize hybrid publishing models to charge expensive and annually increasing subscription fees to subscribing institutions while simultaneously charging APCs to institutional authors, creating a certain degree of “double charging” problem. Therefore, funds used by libraries for literature resource construction should gradually transform toward open publishing fees in the future—this is the first concept that should be clarified. Open access is not a matter for one library or one

university; the rapid development of the open access movement in Europe and the United States has benefited from the unremitting efforts of major libraries and university alliances. Currently, Chinese university libraries' awareness of open access is still at the stage of understanding and exploration. To strive for greater resource sharing space and provide more possibilities for expanding and extending library resource construction capabilities, they must jointly promote the open publishing movement in the form of university alliances—this is the second concept that should be clarified. Without support from national-level and university-level policies, university libraries still have a long way to go to take initiative, assume corresponding social responsibilities, and achieve the transformation of academic journals from subscription mode to open access mode. Under the current domestic environment where policies are not yet mature, university libraries should first change their own concepts, recognize the importance of this transformation, and incorporate research and exploration of related issues into their key work and overall planning. Second, as the literature information centers of universities, university libraries should continuously understand their own researchers' attitudes toward open access of academic papers, keep track of the progress of open access agreements both domestically and internationally, and based on mastering industry dynamics, publishing information, and their own university's situation, unite with other departments such as research management to promote the issuance of their university's open access policies. Finally, university libraries should also leverage collective strength, conduct evaluation and research in the form of alliances, participate in national-level rule-making, actively study pricing models, promote the implementation of relevant policies, and provide institutional guarantees for the standardization and sustainable development of open publishing.

6.3 Funding Way Out: Guide and Regulate the Pricing Model of Open Access Papers

The cost issue of open access is the result of a three-way game among researchers, publishers, and subscribing institutions. Currently, international publishers do not have preferential pricing policies for China. Under the reality that APCs for open access papers are generally high and the overall funding for university library literature construction has not significantly increased, the feasibility of continuing to promote the open access movement by using subscription funds as large-scale open publishing support funds is not strong. Other funding transformation models such as deductions, offsets, and price reductions need to be considered, while also addressing cost control issues in the open access process. University libraries should leverage collective bargaining advantages to guide and regulate APC prices, study the transformation mechanism from subscription mode to open access mode, and reduce the cost burden of China's open access movement. First, each university should prepare basic data before price negotiations, including subscription fees, usage costs, and annual budget estimates for foreign language journals, as well as the total number, growth rate, and disciplinary distribution of open access papers published by their researchers.

Second, they should pay attention to major publishers' attitudes, actions, and relevant policies toward open access, including the proportion of open access papers in publishers' journals, APC charging policies, and signed open publishing transformation agreements, and conduct selective, phased, and targeted negotiations with publishers to gradually expand the open access scope. Finally, they should anticipate potential problems in the transformation process, such as deduction basis, deduction timing, and the relationship between deduction amounts and journal price increases, and form professional negotiation teams. For example, they could learn from the Dutch university consortium's approach by entrusting university presidents as chief negotiation advisors to maintain control and discourse power in negotiations with publishers.

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Publication Ethics Statement of *Library and Information Service Magazine*

To strengthen and enhance academic norms, research integrity, and academic ethics in the processes of academic paper writing, reviewing, and editing, establish good academic atmosphere, promote the spirit of science, resolutely resist academic misconduct, and establish and maintain a fair, just, and open academic exchange ecological environment, the *Library and Information Service Magazine* (including the editorial departments of *Library and Information Service* and *Knowledge Management Forum*) has formulated a publication ethics statement based on the actual conditions of the two journals, officially released in February 2020.

The statement commits that the two journals will strictly abide by and implement national policies and regulations related to academic ethics and editing and publishing, standardize the behaviors of authors, peer reviewers, and journal editors throughout the entire editing and publishing process, and accept supervision from the academic community and the whole society. It includes three main parts with a total of fifteen clauses: First, authors' publishing ethics (Academic papers are an important component of scientific research; Academic misconduct is a cancer in academic papers; Authors are the main contributors to academic papers; Authorship reflects authors' intellectual property rights and academic contributions; Academic papers must attach great importance to intellectual property rights and information security; Normative citation of references is an important manifestation of academic norms; Great importance must be attached to the normative management of research data; Establish error correction and academic self-purification mechanisms). Second, peer reviewers' publishing ethics (Peer review is an important quality control mechanism for papers; Reviewers should comply with relevant requirements for paper review; Reviewers must strictly follow relevant ethical guidelines and codes of conduct). Third, editors' publishing ethics (Editors should become guardians of academic paper quality; Editors should play a monitoring role in academic ethics construction; Editors must become the last barrier against academic misconduct; Implement "zero tolerance" for academic misconduct).

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