Digital-Intelligent Transformation of Collection Development in Provincial Academic Libraries: Current Status, Challenges, and Countermeasures—A Case Study of Jiangsu Province*

Authors: Xu Jie, Zheng Jianming, Ren Zhigang, Xun Nan, Xu Jie

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Abstract

【目的】The digital-intelligent transformation of university libraries is the essential path for implementing the national digital education transformation strategy and promoting high-quality services in university libraries. As a core business, document resource construction is constrained by complex internal and external factors, urgently requiring empirical research integrated with data.

[方法] This paper systematically analyzes the positive changes brought about by the digital-intelligent transformation and the risks and challenges faced, using 7-year data related to document resource construction from university libraries in Jiangsu Province.

[结 论] Targeted countermeasures and suggestions are proposed, including strengthening digital-intelligent strategic thinking, optimizing collaborative management structures, enabling resource construction scenarios with digital-intelligence, constructing provincial-characteristic development models, and fostering an open and collaborative digital-intelligent ecosystem.

Full Text

Preamble

Research on the Present Situation, Challenges and Countermeasures of Digital-Intelligent Transformation of Literature Resources Construction in Provincial University Libraries —A Case Study of Jiangsu Province

Xu Jie, Zheng Jianming, Ren Zhigang, Huan Nan
(Nanjing Normal University Library, Nanjing 210023; School of Information

Management, Nanjing University, Nanjing 210023)

Abstract

[**Purpose**] The digital-intelligent transformation of university libraries is an essential path to implement the national digital education transformation strategy and promote high-quality library services. As a core business function, literature resource construction is constrained by complex internal and external factors, urgently requiring empirical research grounded in data. [**Method**] This paper utilizes seven years of data related to literature resource construction from university libraries in Jiangsu Province to systematically analyze the positive changes and risk challenges brought about by digital-intelligent transformation. [**Conclusion**] Targeted countermeasures and suggestions are proposed, including strengthening digital-intelligent strategic thinking, optimizing collaborative management frameworks, empowering resource construction scenarios with digital intelligence, constructing provincial characteristic development models, and cultivating an open and collaborative digital-intelligent ecosystem.

Keywords: University Library; Construction of Literature Resources; Intelligentization of Literature Resource Construction
Classification Number: G25

Corresponding author: Xu Jie, Nanjing Normal University Library, Postal Code 210023, Email: 34221@njnu.edu.cn. *This paper is one of the research outcomes of the 2024 National Social Science Fund Major Project "Research on the Construction of Public Digital Culture Governance System for Digital-Intelligent Scenarios" (24&ZD182).*

The 15th Five-Year Plan period represents a strategic critical juncture for China to advance toward becoming a strong educational, cultural, and technological nation. The "Education Powerhouse Construction Plan Outline (2024-2035)" elevates educational digitalization to a national strategic level, clarifying its core position in promoting educational modernization. The rise of artificial intelligence, superimposed on the process of educational digital transformation, is amplifying the magnitude and intensity of change. As a crucial pillar of the higher education resource guarantee system, university libraries' literature resource construction work is at a critical node of digital-intelligent transformation, facing both unprecedented development opportunities and a series of deep-seated risks and challenges. Currently, the digital-intelligent transformation of literature resource construction presents a development trend characterized by multi-subject collaboration, multi-link efficiency enhancement, and multi-level integration. This trend not only empowers provincial university libraries to achieve personalized development based on educational levels, disciplinary characteristics, and scale differences but also gradually ushers in a digital-intelligent ecological collaborative development pattern. Based on seven years of literature resource construction data from university libraries in Jiangsu Province, this paper systematically analyzes the positive transformations and potential risks

brought by digital-intelligent transformation, and deeply explores how provincial university libraries can break through bottlenecks based on current conditions and explore effective paths and innovative strategies for the digital-intelligent transformation of literature resources when responding to era changes.

2 Research Progress and Trends

Against the backdrop of the national educational digitalization strategy, AI strategy, and global library transformation, how the digital-intelligent transformation of literature resource construction in university libraries can precisely align with user needs has become a focus of attention in both academia and industry. Relevant industry research reports both domestically and internationally emphasize the importance and complexity of digital-intelligent transformation in university library literature resource construction. The three versions of the "Horizon Report: Library Edition" in 2014, 2015, and 2017 proposed trend analyses for the development of global universities and research libraries, highlighting "the evolving nature of scholarly records," "research data management," and "keeping pace with rapidly changing demands," and emphasizing the fundamental trends in literature resource services: valuing composite information resources, closely integrating with scientific research work, and embracing expectations for new technologies and applications [1]. The Association of College & Research Libraries (ACRL) released the "2024 Top Trends in Academic Libraries" report, pointing out that "restructuring and reforming collection practices" has been a hot topic in the American library community over the past two years [2]. At the end of 2021, the Ministry of Education' s Higher Education Library and Information Work Steering Committee in China released the "University Library Modernization Compass Report," which identified literature resource construction as one of the eight practical issues that university libraries need to break through within five years [3]. The 2025 "University Library Resource Service Integration Compass Report" further pointed out that libraries' resource forms, service methods, and user needs have all undergone significant changes, and traditional resource construction and service models can no longer meet digital transformation demands. University libraries must comprehensively promote the modernization of resources and services, and strive to integrate into the integrated development pattern of education, science and technology, and talent [4].

Related academic research has conducted theoretical discussions and practical studies on the digital-intelligent transformation of literature resource construction around elements such as digital resources, data support, management service innovation, future learning centers, and open science, as well as case studies. Zheng Jianming and Qian Peng (2010) [5] proposed that the shift from resources to services is an inevitability when domestic university library digital construction develops to a certain stage, and that university library digital systems need to build a distributed service system implemented by multiple participating libraries. Ke Ping and Zou Jinhui (2019) [6] proposed that in

the post-knowledge service era, library transformation consists of four elements: space, resources, services, and management, which requires solving both internal and external theoretical issues as well as conceptual, key element, and path issues. Liu Jingyi, Liu Jingyu, and Chu Jingli (2023) [7] proposed that the advanced path for high-quality development of university libraries should adhere to starting from user needs, achieving a shift from resource-driven to service-driven, and then to innovation leadership, transforming the strategic planning of university libraries' service and capability systems into actual actions. Chu Jiewang, Zhu Aiyu, and Zou Qifeng (2024) [8] proposed that university libraries face five major problems in promoting resource service integration: funding gaps, paper-to-digital transition, supply-demand mismatch, paper collection expansion, and capability-position mismatch, requiring the construction of five major concepts oriented toward strategy, function, users, characteristics, and technology adaptation. Zhao Xingsheng and Yao Xiaotong (2025) [9] analyzed the new challenges posed by future learning centers to library literature resource construction, and discussed implementation paths from perspectives such as resource types and quantities, technology application, resource discovery, and librarian attitudes and capabilities.

Existing research often conducts studies from single-library and macro perspectives, which has good practical significance, but empirical research combining data is relatively scarce. Based on data from the "Jiangsu Province University Library Career Development Statistics and Decision Service System Platform" and the "2023 Jiangsu Province Higher Education Institution Library Development Report" [10], and comparing it with the "2023 China University Library Basic Statistical Data Analysis" [11], this paper explores more targeted management and application strategies to provide references for university libraries in other provinces.

3 Current Status of Digital-Intelligent Transformation of Literature Resources in Jiangsu University Libraries

The Jiangsu Provincial University Library and Information Work Committee launched the construction project of the "Jiangsu Province University Library Career Development Statistics and Decision Service System Platform," led and coordinated by Nanjing Normal University Library. The platform has accumulated over 400,000 business data entries for seven years, forming a dynamic database covering all dimensions of university library operations across the province. Data analysis reveals that the literature resource transformation in Jiangsu university libraries presents five positive characteristics: In terms of resource allocation structure, the proportion of digital resource procurement funding continues to rise, with significant improvements in resource access volume and usage efficiency, gradually becoming the core support of the literature guarantee system; in stark contrast, paper resource procurement scale decreases year by year, with physical collection circulation and utilization rates showing clear downward trends, reflecting profound changes in resource carrier forms.

In terms of service model innovation, universities across the province actively promote integrated paper-digital resource construction, accelerate the deployment of intelligent service scenarios, and drive resource management and services toward intelligent and integrated development. In characteristic resource construction, universities systematically plan and build self-built characteristic databases based on disciplinary advantages, with both quantity and quality achieving steady growth. Additionally, through the provincial university library alliance procurement mechanism, resources are jointly built and shared, effectively improving procurement efficiency.

3.1 Digital Resource Funding Proportion and Utilization Continue to Rise

Literature resources in Jiangsu university libraries have gradually formed a core support system centered on digital resources. The procurement funding for digital resources in university libraries accounts for an increasing proportion of total literature resource funding, basically on par with the national university level. Among the 121 university libraries that submitted data across the province, electronic resource funding reached 429.6368 million yuan, accounting for 63.72% of total literature funding (62.3% in 2022), with an average of 3.5507 million yuan per library, a significant increase from the 52.69% proportion of electronic resource funding in 2017. During the same period, the proportion of electronic resource funding in Chinese university libraries in 2023 was 65.8% (66.5% in 2022), with an average of 3.842 million yuan per library [10].

Figure 1 [Figure 1: see original paper]: Changes in the proportion of digital and paper resource funding in Jiangsu university libraries from 2017 to 2023

The utilization rate of digital resources has substantially improved. According to data from the "Jiangsu Province University Library Development Report" from 2019 to 2023 (with detailed statistics starting in 2019), the usage of the most subscribed Chinese and foreign language databases in universities across the province shows that electronic resource usage has increased significantly. Among the top 5 Chinese databases by subscription volume in the province, usage increased by 47.58% (see Table 1), while usage of the top 5 foreign language databases increased by 90.18% (see Table 2).

Table 1 : Usage of Top Chinese Databases Subscribed by Jiangsu Province Universities from 2019-2023

Database (Usage Unit: times)	2023 vs 2019 Increase
CNKI Series Databases (full-text downloads)	80.63%
Duxiu Academic Search (full-text downloads)	185.81%
Wanfang Knowledge Service Platform (full-text downloads)	8.23%
VIP Chinese Journals Service Platform (full-text downloads)	59.51%
Chinese Academic Literature Database (full-text downloads)	42.75%
Average Increase	**47.58%**

Table 2 : Usage of Top Foreign Language Databases Subscribed by Jiangsu Province Universities from 2019-2023

Database (Usage Unit: times)	2023 vs 2019 Increase
Springer SLCC Journals Full-Text Database (full-text downloads)	151.65%
Clarivate SCIE (search times)	94.91%
Elsevier SD (full-text downloads)	80.83%
American Chemical Society ACS (full-text downloads)	69.44%
Science Magazine (full-text downloads)	99.32%
Average Increase	**90.18%**

3.2 Paper Resource Utilization and Procurement Volume Continue to Decline

In contrast to the substantial increase in digital resource usage and funding proportion, paper resources show a downward trend, with paper newspapers and journals declining notably. In 2023, the average annual book circulation per library was 33,700 volumes, a 74.38% decrease from the 131,600 volumes average in 2017. In 2023, the average paper resource funding per library was 1.9359 million yuan, a 47.2% decrease from the 2.8498 million yuan average in 2017. The annual addition of paper literature shows a downward trend, with the number of newly added paper newspapers and journals decreasing significantly. In 2023, the average number of newly added books per library was 40,600 volumes, an 18.56% decrease from 47,900 volumes in 2017; the average number of newly added newspapers and journals per library in 2023 was 1,090 volumes, a 63% decrease from 2,911 volumes in 2017.

Figure 2 [Figure 2: see original paper]: Changes in the number of newly added paper books and periodicals in Jiangsu university libraries from 2017 to 2023

3.3 Accelerated Deployment of "Smart Library Service Platform"

Data shows that online service demand in libraries has increased year by year from 2017 to 2023. To promote integrated paper-digital management, Jiangsu university libraries have carried out overall deployment of the "Smart Library Service Platform." Homepage visits to libraries across the province continue to rise, particularly noticeable in undergraduate-level university libraries, increasing from an average of 1.2118 million visits per library in 2017 to 1.3982 million visits in 2023. Compared with 2022, the number of libraries upgrading to the "Smart Library Service Platform" in 2023 increased by nearly 10%, being more evident in undergraduate-level institutions. Among the 56 undergraduate-level university libraries in the province, 26 have upgraded to intelligent platforms. Twenty-three libraries use the "Chaoxing LIBSTAR Smart Library Service Plat-

form"(17 in 2022), and three use the "Huiwen New Generation Smart Library Service Platform." One hundred eight libraries possess intelligent equipment, with 60 having five or more types, accounting for 55.56% of reporting libraries. Intelligent equipment such as augmented reality/virtual reality, inventory robots, and consultation robots have also entered university libraries.

3.4 Significant Increase in Self-Built Characteristic Databases

Self-built characteristic databases are developed by university libraries based on their resource advantages, disciplinary characteristics, and user needs through independent development or cooperative construction, digitally collecting, organizing, storing, and managing locally distinctive literature resources to provide strong support for teaching and research activities [12]. In 2017, 34 university libraries in Jiangsu Province built 144 characteristic databases, which by 2023 had grown to 60 university libraries building 247 databases (see Table 3), including: 104 full-text databases, 40 composite databases, 35 multimedia databases, 31 abstract/index databases, 22 thematic and other databases, 12 tool databases, and 3 numerical/factual databases.

Nanjing University built two special topic databases: the Ancient Books and Special Collections Literature Release Platform and the Jiangsu Province University Precious Ancient Books Resource Database. China University of Mining and Technology Library built nine special topic databases including low-carbon new energy, mining engineering digital library, and coal mine literature and history databases. Jiangnan University Library built five special topic databases including food science and engineering, food teaching resources, and Han ethnic folk costume characteristics, demonstrating the construction capabilities and disciplinary advantages of Jiangsu university libraries as well as regional cultural inheritance.

Table 3 : Changes in the Number of Self-Built Databases in Jiangsu Province from 2017 to 2023

Year	Number of Libraries with Characteristic Databases	Total Self-Built Characteristic Databases
2017	34	144
2018	[Data not provided in original]	[Data not provided in original]
2019	[Data not provided in original]	[Data not provided in original]
2020	[Data not provided in original]	[Data not provided in original]
2021	[Data not provided in original]	[Data not provided in original]
2022	[Data not provided in original]	[Data not provided in original]
2023	60	247

3.5 Alliance Coordination Mechanism Demonstrates Aggregation Effect

As an expert organization for university libraries in the province, the Jiangsu Provincial University Library and Information Work Committee plays a coordinating, consulting, researching, and guiding role, leading university libraries across the province to continuously accelerate digital transformation and improve literature resource quality and overall service levels in terms of institutional mechanism innovation, resource co-construction and sharing, and talent team construction. The funding allocated by the Jiangsu Provincial Department of Education to the Provincial University Library and Information Work Committee is mainly used for the introduction of Chinese universal resources and well-known foreign language resources needed for teaching, research, and discipline construction in universities across the province, adopting group procurement methods to improve funding efficiency and the guarantee strength of Chinese and foreign language literature resources. In 2023, the number of resources jointly procured by Jiangsu university library groups reached 41, an increase of nearly 30% compared with 2018. Among them, six databases were subsidized or purchased outright using funding from the Jiangsu Provincial Department of Education (New Oriental Multimedia Learning Library, CSSCI, EBSCO Database, SLCC Journal Database, Yizhuan Patent Platform, and Boxue Yizhi Learning Platform), with total funding of approximately 5.8 million yuan, and procurement funding performance has increased year by year [8].

4 Realistic Dilemmas Facing the Digital-Intelligent Transformation of Literature Resources in Jiangsu University Libraries

Although Jiangsu university libraries have achieved phased breakthroughs in the digital-intelligent transformation process of literature resources and formed a development model with regional characteristics, they still face multiple realistic challenges against the backdrop of accelerated intelligent technology iteration and continuously upgraded educational demands: restricted procurement funding and homogenized construction, surging proportion of foreign digital resource funding, digital resource "shortcomings" in vocational college libraries, and the need for improvement in the standardization and openness of characteristic database construction.

4.1 Funding Constraints and Resource Homogenization

Affected by the external environment, literature resource funding in Jiangsu Province universities can no longer continue to rise, and literature resource procurement is undergoing structural changes, particularly evident in undergraduate-level libraries. In 2023, the literature resource procurement funding of 121 reporting libraries totaled 670.9236 million yuan, with an annual average of 5.5448 million yuan per library (6.7359 million yuan in 2022),

lower than the national average of 6.640 million yuan. Undergraduate-level libraries decreased from an average of 10.9194 million yuan in 2022 to 10.0912 million yuan in 2023 (an 8% decrease). Under the pressure of database price increases and exchange rates, many undergraduate-level libraries have adjusted their digital resource renewal varieties. In 2022, the minimum number of digital resource subscription units ordered by undergraduate-level libraries across the province was 5,446, which decreased to 5,379 in 2023. In digital resource construction, university libraries face monopolistic pricing of some high-quality academic resources, lack autonomous and flexible precise response strategies and performance management tools, and show obvious homogenized procurement, affecting the coverage of digital resource varieties in the province. In platform database statistics, the trend of further homogenization in 2023 compared with 2022 is evident: among Chinese standard database subscription units, 9 were selected by 50 or more libraries (7 in 2022), 12 by 40 or more, 33 by 30 or more (30 in 2022), 57 by 20 or more, and 116 by 10 or more (112 in 2022). Among foreign standard database subscription units, 91 were selected by 10 or more libraries, including 3 by 30 or more and 14 by 20 or more.

4.2 Surge in Foreign Digital Resource Funding Proportion

Accompanying the development of high-level research university construction and international academic exchange, the demand for foreign digital resources in Jiangsu university libraries has increased. Both the quantity and funding of foreign digital resources show rapid growth, while funding and quantity for Chinese digital resources have decreased significantly, particularly evident in data from undergraduate-level libraries, reflecting rapid changes in user demand. 2020 reporting data shows that Chinese digital resource funding across the province was 128.8483 million yuan, while foreign digital resource funding was 208.5372 million yuan, with a Chinese-to-foreign funding ratio of 1:1.63. In 2023, Chinese digital resource funding decreased to 124.7925 million yuan (a 3% decrease from 2020), while foreign digital resource funding reached 297.9168 million yuan (a 42.86% increase from 2020), with the Chinese-to-foreign funding ratio becoming 1:2.33. The rising proportion of foreign digital resources is particularly evident in undergraduate-level libraries. In 2023, Chinese digital resource funding decreased to 1.7606 million yuan (an 18% decrease from 2020), while the average foreign digital resource funding per library reached 5.3029 million yuan (a 38% increase from 2020), with a Chinese-to-foreign funding ratio of 1:3. Apart from funding factors such as prices and exchange rates, the increase in foreign digital resource demand is also highlighted in the number of digital resource subscriptions: in 2020, the province ordered 2,705 minimum units of Chinese digital resources, which decreased to 2,508 in 2023 (a 7% decrease).

4.3 Digital Resource "Shortcomings" in Vocational College Libraries

With continuous breakthroughs and rapid development of digital technology, vocational colleges face an important test of "fitness," urgently needing to fill

"shortcomings" and remedy "weaknesses" in digital resources and other areas [13]. Data shows that in recent years, literature resource funding in vocational college libraries has declined, and the digital resource "shortcoming" is increasingly growing. In 2023, the average literature resource procurement funding per vocational college library was 1.4802 million yuan, compared with 1.5744 million yuan in 2017, a 6% decrease. In 2017, the average literature resource funding for undergraduate-level libraries was 5.2 times that of vocational college libraries, with the gap increasing to 5.6 times in 2023. In 2017, digital resource funding accounted for 22% of literature resource funding in vocational college libraries, compared with 56% in undergraduate-level libraries. In 2023, the proportion of digital resources to literature resource funding increased to 52% in vocational college libraries and 70% in undergraduate-level libraries. In terms of accumulated e-book volume, in 2017, the average accumulated e-book volume per vocational college library was 1.2843 million volumes, compared with 3.5137 million volumes for undergraduate-level libraries; in 2023, the average accumulated e-book volume per vocational college library was 6.9038 million volumes, compared with 12.2220 million volumes for undergraduate-level libraries.

4.4 Characteristic Database Scale Effect Needs Improvement

In the field of characteristic database construction, standardization and openness need improvement. Although the number of self-built databases in universities across the province has grown year by year, the lack of unified construction standards and norms has led to inconsistent data formats and metadata descriptions, affecting resource integration and sharing. Some characteristic databases have low openness due to intellectual property protection or management authority factors, providing only limited services within their own institutions, failing to fully realize the social value and academic influence of characteristic resources, and making it difficult to form scale and radiation effects. In the reported list of self-built characteristic databases, some databases have stopped updating and restrict access. Characteristic database construction should fully investigate needs, digitally empower connotations, ensure the accuracy, timeliness, and accessibility of digital resources, and implement measures such as providing real-time evaluation and feedback channels, standardization construction, and multi-channel promotion and sharing to enhance the social value of characteristic databases and the overall strength of provincial digital resource services.

5 Countermeasures and Suggestions for Digital-Intelligent Transformation of Literature Resources in Provincial University Libraries

"China' s education looks to Jiangsu." Jiangsu' s education system covers all disciplines and various levels, with leading educational resources and scale nationwide and certain representativeness. Against the backdrop of widespread intelligent technology application and prominent data resource value, Jiangsu

university libraries have a good foundation for literature resource construction and services. Statistics show that in 2023, the total collection resources of university libraries across the province reached 1.74 billion (volumes/items), with digital storage reaching 11,800 TB. Facing realistic dilemmas in digital transformation, Jiangsu university libraries need to actively respond to changes and proactively seek change, leveraging the advantages of digital-intelligent empowerment, open sharing, and characteristic construction to promote greater effectiveness in digital-intelligent transformation.

5.1 Transform Consciousness: Strengthen Digital-Intelligent Strategic Thinking

Provincial university libraries need to elevate the digital-intelligent transformation of literature resource construction to a strategic core position, deeply recognizing its supporting role in higher education development. The "ACRL Top Trends in Academic Libraries Report: 2016 Edition" by the Association of College & Research Libraries shows that optimizing collection scale requires establishing more comprehensive and flexible methods for budget management. Some American university libraries have established new collection analyst positions [14]. Jiangsu university libraries should learn from advanced experiences, further clarifying individual goals and provincial orientation for the digital-intelligent transformation of literature resource construction. Under the guidance of the Jiangsu Provincial University Library and Information Work Committee, continuously improve the statistical indicator system of the "Jiangsu Province University Library Career Development Statistics and Decision Service System Platform," strengthen reporting mechanisms, enhance data auditing and verification, improve data quality, and promote the application and transformation of data achievements to provide strong support for strategic management and decision-making in university libraries across the province.

5.2 Transform Organization: Optimize Collaborative Management Structure

Construct an organizational system of "provincial coordination—regional collaboration—university autonomy" to further coordinate strategic planning for university libraries across the province, and formulate an advanced path of "paper-based—digital—intelligent—ecological"for literature resource construction. Establish digital resource co-construction and sharing, formulate more effective mechanisms for precise procurement, legal sharing, and cost allocation of foreign digital resources, forming provincial synergy to reduce procurement costs; divide collaborative regions according to disciplinary clusters, establish regional resource digital-intelligent co-construction and sharing alliances, and clarify resource construction priorities for each region. Address the digital resource "shortcoming" issue in vocational college libraries by implementing assistance programs, paired support, providing technical training, resource mirror services, and characteristic database construction guidance to narrow regional and inter-institutional

digital resource gaps.

5.3 Transform Methods: Empower Resource Construction Scenarios with Digital Intelligence

With new-generation digital-intelligent technologies such as artificial intelligence, big data, blockchain, and the Internet of Things as core drivers, deeply reshape the entire process and service scenarios of digital-intelligent literature resource construction in university libraries, achieving intelligent and high-quality literature resource construction and guarantee. In the resource procurement phase, use big data analysis of user access behavior and disciplinary development trends to establish intelligent procurement decision models, precisely identify popular resources and potential needs, and avoid homogenized construction; develop intelligent cataloging systems based on natural language processing to achieve automatic classification, indexing, and knowledge graph construction of literature resources, enhancing the mining of resource value; address foreign resource funding constraints by fully leveraging data-driven approaches in optimizing literature resource structure, scientifically allocating resources in each link, and implementing on-demand procurement strategies (such as POD, PAD, etc.) to reduce procurement costs and achieve precision in literature resource construction; construct a virtual-real integrated resource system to provide readers with visual and interactive literature acquisition experiences, promoting the digitalization of literature resource construction to transform and upgrade toward intelligent, personalized, and scenario-based directions.

5.4 Transform Models: Construct Provincial Characteristic Construction Models

Based on Jiangsu' s university disciplinary advantages and regional cultural characteristics, construct a differentiated and complementary digital construction model for literature resource construction. Through diversified cooperation involving overall guidance, university co-construction, and social participation, deeply integrate "industry-academia-research-application" to create a Jiangsu-characteristic university literature resource construction brand. On the one hand, further deepen cooperation and exchanges with domestic and foreign libraries, provincial research institutions, publishers, and database vendors, actively participate in international and domestic open science plans and projects, promote the establishment of digital resource co-construction and sharing mechanisms among regional university libraries, and encourage cooperation and exchanges between libraries of different levels to ensure effective flow of digital resources between different institutions; on the other hand, strengthen overall planning of characteristic digital resources in university libraries across the province, establish joint catalogs and retrieval platforms for characteristic resources to enable discovery and acquisition of characteristic resources.

5.5 Transform Ecology: Cultivate Open and Collaborative Digital-Intelligent Ecosystem

Seizing the opportunity of rapid development in open science (marked by AI4S), construct an open, collaborative, and symbiotic digital-intelligent ecosystem to promote the transformation of university libraries from resource storage centers to knowledge innovation hubs. University libraries need to incorporate open access resources (including preprint resources) into their collection systems, use big data and artificial intelligence technology to enhance the intelligent and personalized service levels of open resource services; establish open access resource transition research groups to provide submission suggestions for open access journals for faculty and students using digital-intelligent tools. Further break down data silos between universities, research institutions, and enterprises to achieve real-time connectivity and intelligent matching of literature resources, technological achievements, and user needs, explore applications in generative artificial intelligence, automatic knowledge graph construction, digital humanities, digital memory (such as Chongqing University Memory), and other fields, and accelerate the transformation of cutting-edge technologies into the digital-intelligent ecosystem of university library literature resource construction. Encourage university libraries to participate in global open science plans, promote the transformation of characteristic databases from "independent campus construction"to "global sharing,"and enhance the social value and academic influence of literature resources.

6 Conclusion and Future Outlook

Currently, in the process of digital transformation of literature resource construction, Jiangsu university libraries have relied on a good foundation of educational resources and preliminary practical exploration to initially construct a digital resource system and service framework of considerable scale, forming a demonstration effect nationwide. However, they still face realistic challenges such as insufficient procurement funding, resource homogenization, uneven development, and inadequate knowledge service capabilities. Through countermeasures and suggestions such as strengthening digital-intelligent strategic thinking, optimizing collaborative management structures, empowering resource construction scenarios with digital intelligence, cultivating open and collaborative digital-intelligent ecosystems, and constructing provincial characteristic models, new momentum can be injected into the high-quality development of provincial university libraries, helping to achieve the leap from a large education province to a strong education province, and demonstrating Chinese wisdom and provincial solutions in global educational digital competition.

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