

Rethinking the Functions and Positioning of University Libraries in the Context of “Double First-Class” Construction: Postprint

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Date: 2023-04-01T16:15:56+00:00

Abstract

[Purpose/Significance] With the introduction of the overall plan and implementation measures for the “Double First-Class” construction, universities have successively released their construction plans. As the main institution supporting university teaching, research, and learning, the function and positioning of university libraries play a crucial strategic supporting role in the “Double First-Class” construction. [Method/Process] Using literature analysis, web-based research, and scientific measurement software, this study analyzes the current state of research and practice on the “Double First-Class” construction of university libraries in China. Based on the strategic requirements for libraries in the construction plans of 42 first-class universities in China and the mission statements of libraries in the top ten world-class universities ranked by U.S. News, it expounds the supporting role of university libraries in the “Double First-Class” construction, interprets the overall objectives of the “Double First-Class” construction of university libraries in China, rethinks their functions and positioning, and clarifies effective approaches for university libraries to achieve their construction goals and tasks under the new context. [Results/Conclusion] University libraries need to continuously uphold tradition while innovating on the basis of inheritance. Relying on the information resource guarantee center, disciplinary knowledge support center, cultural inheritance and exchange center, and interactive sharing learning center, they should construct a full-media information resource guarantee and sharing system that reflects their core competitiveness, a new service system that provides full-process support for teaching and research, a cultural cooperation system that comprehensively builds relationships between libraries and external entities, and an organically integrated intelligent innovation system for individual research and collaborative learning, thereby realizing the service functions of university libraries and demonstrating their service value.

Full Text

Rethinking the Functions and Positioning of University Libraries Under the Background of “Double First-Class” Construction

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Abstract: [Purpose/Significance] With the introduction of the overall plan and implementation methods for “Double First-Class” construction, universities have successively issued their construction plans. As the main institution supporting teaching, research, and learning in universities, the functions and positioning of university libraries play a crucial strategic supporting role in “Double First-Class” construction. [Method/Process] Using literature analysis, network survey methods, and scientific measurement software, this paper analyzes the current research and practice status of “Double First-Class” construction in Chinese university libraries. Based on the strategic requirements for libraries in the construction plans of 42 first-class universities in China and the mission planning of libraries at the top ten world-class universities in the U.S. News rankings, this study elaborates on the supporting role of university libraries in “Double First-Class” construction, interprets the overall goals of “Double First-Class” construction for Chinese university libraries, reconsiders their functions and positioning, and clarifies effective pathways for libraries to achieve their construction goals and tasks under this new background. [Result/Conclusion] University libraries need to continuously uphold tradition while innovating, relying on the information resource guarantee center, disciplinary knowledge support center, cultural heritage exchange center, and interactive shared learning center to build an all-media information resource guarantee and sharing system that reflects their core competitiveness, a new service system that supports teaching and research throughout the entire process, a cultural cooperation system that comprehensively builds relationships between libraries and external entities, and an intelligent innovation system that organically integrates individual research and collaborative learning, thereby realizing the service functions of university libraries and demonstrating their service value.

Keywords: “Double First-Class”; Resource Guarantee; Subject Service; Cultural Heritage; Shared Learning; Functional Positioning **Classification Number:** G250

1. Background of “Double First-Class” Construction

In October 2015, the State Council issued the “Overall Plan for Coordinating the Construction of World-Class Universities and First-Class Disciplines” [1] (hereinafter referred to as the “Overall Plan”), followed by the “Implementation Methods for Coordinating the Construction of World-Class Universities and First-Class Disciplines (Provisional)” [2] (hereinafter referred to as the “Im-

plementation Methods”) issued by the Ministry of Education and other ministries, and the “Notice on Publishing the List of World-Class Universities and First-Class Disciplines Construction Universities and Construction disciplines” [3] (hereinafter referred to as the “Notice”). According to the Notice, the first batch of 42 universities selected for “first-class university” construction successively issued their “Double First-Class” construction development plans to accelerate the process of building world-class universities, achieve breakthroughs in discipline construction, and enhance independent innovation capabilities and global academic influence. These construction plans generally focus on discipline development. As an important support for discipline construction and talent cultivation, how university libraries can leverage their resource advantages and service characteristics to play a functional role in talent cultivation, scientific research, social service, and cultural inheritance and innovation under the “Double First-Class” background, and identify their positioning under the new situation, are urgent issues that need to be studied.

1.1 Research Status of “Double First-Class” Construction in University Libraries

Since the introduction of the Overall Plan, the library community has actively discussed “Double First-Class” construction. Using the CNKI full-text journal database as the sample source and professional search with the search formula “SU=(‘university library’+‘college library’)*‘first-class’“, and limiting the time range from 2016 to November 2019 (search date: November 28, 2019), a total of 316 valid documents were obtained after summarization and deduplication. Using CiteSpace 5.5.R2 for keyword co-occurrence analysis and after merging synonymous keywords (see), it was found that “university library,” “‘Double First-Class’ construction,” and “subject service” appeared frequently with high centrality, indicating that these three keywords have high network centrality and occupy important positions in the keyword network, reflecting that university libraries focus on providing support for “Double First-Class” construction through subject services.

According to the CiteSpace keyword timeline of the sample literature, in 2016, two papers discussed the strategic planning of first-class university libraries from a macro perspective [4-5]; in 2017, the focus was on supporting “university libraries” in “Double First-Class” construction through “subject services” and “resource guarantee” [6-8]; in 2018, discussions concentrated on “resource construction” and began exploring the integration of emerging network information technologies and concepts with library services to innovate service models and capabilities, including conducting subject evaluation services [9-13]; in 2019, besides continuing to focus on “subject services” and “resource guarantee,” the research hotspot introduced the innovative service model of “smart services,” supporting university “Double First-Class” construction by building new smart libraries [14-17].

Overall, research on “Double First-Class” construction in domestic university li-

libraries primarily employs empirical methods such as practice and investigation, focusing mainly on resource construction, subject services, new media technology applications, and innovative service models. There are many specific practical explorations but few foreign references, and relatively little theoretical research on library functions and positioning under the “Double First-Class” background.

1.2 Practice Status of “Double First-Class” Construction in University Libraries

To cooperate with universities in completing “Double First-Class” construction tasks, university libraries are actively exploring and practicing various initiatives. The survey found that among the libraries of the 42 first-class universities, eight have conducted discussions on library construction and services under the “Double First-Class” background through seminars, reports, or activities, such as the “Big Data Innovation Learning Activity” organized by Beijing Institute of Technology Library, which actively promotes the university’s “Double First-Class” construction by enhancing big data research capabilities and sharing the latest research and application results at the wisdom level [18]. The Library and Information Work Guidance Committees of Sichuan and Shaanxi provinces successively held two meetings on collaborative innovation development and service innovation of “Double First-Class” university libraries [19-20]. Additionally, nine university libraries, including Tongji University, Xiamen University, and Northwest A&F University, discussed their libraries’ practical experiences in spatial planning, subject services, and resource construction under the “Double First-Class” background in academic papers [6,21-28]. However, comprehensive library practices specifically for “Double First-Class” construction remain insufficient.

Therefore, based on literature and practice surveys of domestic “Double First-Class” construction, combined with the strategic requirements for libraries in the construction plans of 42 domestic first-class universities and the mission planning of libraries at the top ten world-class universities in the U.S. News rankings, this paper elaborates on the supporting role of university libraries in “Double First-Class” construction, interprets the overall goals of “Double First-Class” construction for Chinese university libraries, reconsiders library functions and positioning, and thereby clarifies the pathways for university libraries to achieve their construction goals and tasks under the new background.

2. Strategic Support of University Libraries for “Double First-Class” Construction

2.1 Supporting Role of Chinese University Libraries in “Double First-Class” Construction

The author investigated the first-class university construction plans of 42 universities and found that 13 universities explicitly proposed construction require-

ments for libraries from the perspectives of resources, services, culture, space, and talent [29-41]. Twelve universities, including China Agricultural University [29] and Shanghai Jiao Tong University [30], proposed building a rich and technologically advanced literature information guarantee system and promoting the digitization of collection resources and characteristic resource construction from the resource perspective. Three universities, including Sichuan University [34], proposed innovating service paradigms and systems to create high-end knowledge service plans from the service perspective. Four universities, including Fudan University [36], proposed developing reading promotion, building classic reading collections, and strengthening cultural education services from the cultural inheritance and construction perspective. Four universities, including Sun Yat-sen University [39], proposed building open and modern university libraries and promoting smart library construction from the space perspective. Minzu University of China [40], Fudan University [36], and Zhejiang University [35] proposed building an optimized, skilled, dedicated, and high-quality library technical support talent team from the talent team construction perspective. It can be seen that university libraries provide important support for “Double First-Class” construction through rich literature information guarantee systems, disciplinary knowledge support systems, cultural education service systems, and smart open shared spaces.

2.2 Supporting Role of Foreign University Libraries in World-Class University Construction

The mission of university libraries should align with the development goals of the university. The Association of College and Research Libraries (ACRL) emphasizes in “Charting Our Future: ACRL Strategic Plan 2020” that as part of the university organizational system, the core value of libraries should not only have common library attributes but also align with the university’s mission and goals [42]. To better establish the mission and goals of libraries, the author investigated the mission, vision, and strategic planning of libraries at the top ten universities in the U.S. News World University Rankings (Stanford University Library and California Institute of Technology Library information not obtained). The results show that in strategic planning, all emphasize supporting world-class university construction; in mission and vision, all are committed to supporting the realization of the university’s mission through knowledge creation, application, preservation, and dissemination; in implementation content, their strategic planning promotes goal achievement from eight aspects: resource construction, service provision, resource access, space utilization, research support, education and teaching, professional development, and community relations.

Specifically, the eight world-class university libraries: (1) Emphasize characteristic resource construction. The survey shows that Harvard University [44], Oxford University [45], Cambridge University [46], and Princeton University Library [47] emphasize strengthening characteristic resource construction and management in their strategic planning, while Oxford University also proposes

intentionally introducing new resource types such as digital maps and musical scores [45]. (2) Provide comprehensive service items. Harvard Library not only has dedicated librarian pairing services for first-year students but also provides 34 services including visualization, data sharing training, and interlibrary loan, enabling users to quickly understand and effectively utilize library resources and services [44]. (3) Promote effective global access to digital resources. MIT Library has established a dedicated Open Access working group [48]; Oxford University Library implements the Gardens, Libraries and Museums Digital Strategy to improve the global discoverability of digital collections [45]. (4) Emphasize space redesign and planning. MIT Library has a dedicated space planning group [48]; University of Washington Libraries plans to develop future-oriented library spaces [49]. (5) Provide research data management based on the life cycle. Harvard Library supports researchers' data management through effective life cycle management plans [44]. (6) Strengthen library-faculty communication. Oxford University Library develops academic resources corresponding to teaching courses [45]. (7) Establish librarian development incentive mechanisms. UC Berkeley Library emphasizes evaluating librarian learning to continuously improve librarian development mechanisms [50]. (8) Establish global community cooperation relationships. Columbia University Libraries cooperate with communities worldwide to participate in scalable shared collection systems [51]; University of Washington Libraries expand the impact of university research results through sustained community cooperation [49].

3. Functions and Positioning of University Libraries Under “Double First-Class” Construction

3.1 Construction Goals

“Double First-Class” construction aims to support a group of high-level universities and disciplines to reach world-class status and build a strong higher education nation [1]. Guided by the Overall Plan and leveraging the unique advantages of university libraries in “Double First-Class” construction, we need to rethink library functions and positioning. According to Article 2 of the “Regulations on Libraries in Regular Institutions of Higher Education” (revised draft) (hereinafter referred to as the “Regulations”) issued by the Ministry of Education in 2015, libraries are positioned as “one center, one institution, three importances”: university libraries are “the school’s literature information resource center, an academic institution serving talent cultivation and scientific research, an important component of school information construction, and an important base for campus culture and social culture construction”... The construction and development level of libraries is “an important symbol of the school’s overall level” [52]. Therefore, under the “Double First-Class” background, libraries should be tailored to suit the university’s construction and development, serve the goal of building world-class universities, and play an irreplaceable role in talent cultivation, scientific research, social service, and cultural inheritance.

3.2 Functions and Positioning

Scholars have already discussed the functions and positioning of university libraries under the “Double First-Class” background. Zhang Ailong [53] believes that the main function of university libraries is to serve talent cultivation, using various forms to improve students’ information literacy and comprehensive quality, and fully playing roles in talent cultivation, scientific research, social service, and cultural inheritance and innovation. Xiao Long [54] believes that the development of university library services from quantitative to qualitative change is mainly reflected in three aspects: first, re-positioning library service roles at the university level; second, transforming library service functions from a single literature information resource center to diversified services; and third, continuously expanding and innovating services. Chen Jin et al. [55] believe that university libraries must strengthen support for teaching, research, and talent cultivation, and perform functions of digital, personalized, and smart services. Li Donghong et al. [56] believe that the functional positioning of university libraries is influenced by the dual impact of “Double First-Class” policy promotion and technological revolution, and needs to play roles in resource optimization, organizational management, environmental space, and diversified services to achieve discipline-centered, first-class resource, service, and management innovation. Chen Sitong et al. [57] believe that based on the needs of “Double First-Class” construction, libraries should provide services from support guarantee and “intelligent” service levels, attention tracking levels, and collaborative support levels. Pan Ying et al. [58] believe that university libraries should integrate into “Double First-Class” construction as supporters of disciplinary resources, incubators of innovative thinking, think tanks for scientific decision-making, and practitioners of new technology leadership. Overall, service as the most important function is the eternal theme of libraries, while establishing an efficient and high-quality service system requires building an all-media information resource guarantee and sharing system that reflects the library’s core competitiveness, a new service system that supports teaching and research throughout the entire process, a cultural cooperation system that comprehensively builds relationships between libraries and external entities, and an intelligent innovation system that organically integrates individual research and collaborative learning. Through analysis, the author believes that libraries should be positioned as information resource guarantee centers, disciplinary knowledge support centers, cultural heritage exchange centers, and interactive shared learning centers. These four centers correspond to the “four systems,” mutually echoing and organically cooperating to realize service functions and demonstrate service value according to the needs of first-class university construction.

4. Effective Pathways for University Libraries to Realize Their Functions and Positioning

4.1 Information Resource Guarantee Center

Relying on the information resource guarantee center to build a reasonably structured, distinctive, diverse, and comprehensive all-media information resource guarantee and sharing system is the foundation for libraries to leverage their resource advantages, provide research resource guarantees for first-class discipline construction, and promote academic information flow and sharing.

4.1.1 Advancing All-Media Information Resource Construction for First-Class Disciplines All-media information resources refer to information resources including paper, electronic, and digital media [59]. “Double First-Class” construction requires university libraries to collect, organize, and preserve high-quality research-oriented academic resources according to the university’s discipline planning. Libraries need to: (1) Establish hierarchical resource guarantee strategies based on discipline planning. For example, Huazhong University of Science and Technology implements hierarchical and classified discipline construction, with resource guarantee strategies advancing by layers according to world-class disciplines, internationally renowned high-level disciplines, characteristic disciplines, backbone basic disciplines, and strategic disciplines [33]. (2) Emphasize information resource guarantee for discipline clusters and interdisciplinary fields. Universities such as Peking University [60] and Shanghai Jiao Tong University [30] focus discipline construction on advantageous discipline clusters and interdisciplinary integration, so libraries must not only provide basic resources for emerging disciplines but also extend resource guarantee to related interdisciplinary fields. (3) Conduct discipline information resource analysis and evaluation. Dynamically tracking literature resource utilization can guide the construction of information resource guarantee systems [17].

4.1.2 Building Characteristic Resource Databases Around Discipline Characteristics Building characteristic resource databases oriented toward the university’s discipline characteristics is an important tool to demonstrate the university’s influence in characteristic discipline fields [61] and an important component of building a non-homogenized all-media information resource guarantee system [62]. Therefore, emphasis should be placed on: (1) Creating databases based on the university’s characteristics and key disciplines, relying on discipline-related characteristic collections, or building databases around the university’s or region’s characteristic literature combined with key disciplines. (2) Emphasizing the mining of network resources. Fully utilizing existing characteristic discipline paper resources and combining the mining of characteristic discipline network resources with the digitization of collection academic resources. (3) Emphasizing the growth of characteristic resources. Strengthening interactive sharing and exchange between resources and scholars, integrating scattered resources, and promoting continuous value growth of resources [63].

4.1.3 Shaping an Academic Information Sharing Platform Based on Endogenous Resources Constructing an academic information sharing platform based on the university's endogenous resources is conducive to promoting the integration, revelation, and discovery of academic information resources, realizing the orderly flow of knowledge, and managing and sharing the university's academic knowledge assets. The university's endogenous academic information resources refer to data and resources generated by the university entity through teaching and research activities, including multimedia resources, research achievement data, and research data management [64]. The concept of "academic information" was proposed in the strategic planning of the University of Melbourne Library. Compared with traditional "library resources," it emphasizes the university's attention to academic information, referring to information, materials, etc., created, published, utilized, and created in learning, research, and teaching, as well as research outputs shared by all parties of the university [65]. As an important link in the university's scientific research architecture and capability demonstration, libraries can protect the university's academic information ecological environment and build a community of shared future for research, teaching, and cooperation through the mining of endogenous academic information resources.

4.2 Disciplinary Knowledge Support Center

Building a vertically deep, comprehensive, and society-oriented new service system that supports teaching and research throughout the entire process based on the disciplinary knowledge support center is necessary for libraries to leverage their data management advantages, reshape academic competitiveness for universities, and provide knowledge and intellectual support services for achieving first-class university construction goals.

4.2.1 Embedding in the Entire Teaching Process to Strengthen Academic Literacy Education To provide in-depth services embedded in the entire teaching process for first-class discipline construction, and combining with the practical experience of world-class university libraries (see), Chinese university libraries should: (1) Strengthen academic literacy education. Establish academic and digital literacy frameworks, embed academic and digital literacy courses into teaching, and develop contextualized digital learning resources based on new media platforms to ensure the sustainability and flexibility of academic literacy education [66]. (2) Provide teaching course support services. Achieve seamless resource integration and full-process support for teaching activities; provide customized teaching course co-development services to assist students in effectively discovering, evaluating, organizing, managing, and utilizing academic resources; provide courses and training on teaching information tools such as visualization and data management.

4.2.2 Integrating into the Entire Research Process to Reshape Academic Competitiveness Under the "Double First-Class" background, li-

libraries can leverage their data management advantages and, combined with the life-cycle support services provided by foreign first-class university libraries (see), develop researcher-centered, research process-integrated comprehensive research support services covering six stages: “raising questions,” “hypothesis and assumption,” and “publication and communication” [67]. In the “raising questions” stage, libraries can provide pre-project scientific data management plan services, including topic-specific services, citation retrieval, and sci-tech novelty searches; in the middle stages of the research process, libraries can provide research data management, text and data mining, digital humanities and digital scholarship services; in the “publication and communication” stage, libraries can provide research result dissemination and reputation management, document delivery, journal submission guidelines, writing courses, EndNote and other writing tool support, and copyright consultation services.

4.2.3 Supporting the Entire Decision-Making Process to Serve Social Development

Under the “Double First-Class” background, decision support services oriented toward internal and external stakeholders are new services that promote technology achievement transformation and serve social development based on deep mining of data and knowledge content. An investigation of decision support services at 42 “Double First-Class” university libraries found that 36 libraries provide decision support services. Based on these universities’ service experience, decision support service content can be considered from two aspects: (1) Data services. These include basic data services and analysis reports based on data, such as Shanghai Jiao Tong University Library’s academic competitiveness analysis, researcher performance evaluation, and discipline development trend analysis [68], as well as trend and frontier reports generated from deep data mining, such as Peking University Library’s scientific research frontier reports on hot research fronts in the university and domestic universities [69], and Fudan University Library’s “ESI Monitoring System” [70]. (2) Development strategy planning and intelligence support services. These provide decision support for the planning, implementation, and monitoring of development strategies for institutions or government departments, such as Beijing Institute of Technology Library providing government consulting services for the Ministry of Industry and Information Technology’s “Mid- and Long-Term Plan for Talent Team Construction in the Equipment Manufacturing Field (2010-2020)” [71].

4.3 Cultural Heritage Exchange Center

Relying on the cultural heritage exchange center to comprehensively build an open, inclusive, inheritance-innovative, and multi-culturally integrated cultural cooperation system between libraries and external relations is an important prerequisite for university libraries to support universities in completing the “Double First-Class” task of “inheriting and innovating culture” and providing traditional culture resource integration, sharing, and cooperative exchange services.

4.3.1 Leveraging Advantages to Promote Traditional Culture The investigation of 42 first-class university construction plans revealed that four first-class universities proposed in their plans to leverage libraries as public cultural service carriers to inherit excellent culture. Therefore, libraries need to: (1) Conduct traditional culture resource construction. Purposefully collect, purchase, organize, and digitize traditional culture resources, including ancient books and local literature. (2) Build traditional culture work platforms. For example, Dalian Library's Baiyun Academy "Library + Academy" model [72] and Tongji University Library's "Wenxuetang" [73] organically combine modern libraries with ancient academies to carry out traditional Chinese culture education. (3) Conduct traditional culture promotion activities, such as reading promotion, traditional culture courses, and experiences [74].

4.3.2 Utilizing Cultural Venues to Strengthen Cooperation and Exchange Building a cultural cooperation and exchange system based on external relations requires libraries to actively promote the participation of external forces to achieve cultural cooperation, exchange, and promotion both inside and outside the library, which is also the approach taken by world-class university libraries when promoting their own culture [75]. For example, Stanford University Libraries cooperate with public welfare organizations and public cultural service units to conduct public exhibitions, cultural lectures, community reading promotion, and handicraft workshops [76]. Chinese university libraries need to: (1) Promote active participation of enterprises and social organizations in the promotion, protection, and utilization of traditional culture resources; (2) Conduct cross-departmental cooperation within the university, cooperating with student societies or inviting renowned faculty lectures; (3) Leverage social forces to conduct social education and training with traditional culture as the main thread, laying a good social foundation for traditional culture inheritance [77].

4.3.3 Promoting Intangible Cultural Heritage to Enrich Campus Culture Intangible cultural heritage (ICH) is an important manifestation of excellent traditional culture and an important object that libraries should actively protect and develop when inheriting and innovating traditional culture. University libraries can protect and develop ICH culture through a combination of activity promotion, resource construction, and academic research: (1) Establish ICH cultural databases to materialize "living culture" into tangible documents for permanent preservation [78], and conduct rescue collection of original ecological resources such as audio-visual files and physical objects to inherit and protect ICH culture, such as the Tianjin Shi Diao Database of Tianjin Library [79]. (2) Promote in-depth research on ICH culture by actively cooperating with university faculty and research institutions to conduct scientific research on ICH culture and achieve the purpose of protecting and developing ICH culture. (3) Conduct ICH culture promotion activities through cultural exhibitions, human libraries, ICH cultural and creative markets, and other activity forms.

4.4 Interactive Shared Learning Center

Establishing an interactive shared learning center is an effective way to realize an intelligent innovation system for individual research and collaborative learning that integrates smart interconnection, multi-dimensional interaction, intelligent sharing, and organic fusion. It is key for university libraries to serve university talent cultivation, scientific research, social service, and cultural inheritance and innovation by providing creative space services, innovation literacy education, and intelligent interconnection services.

4.4.1 Developing Creative Space Services to Achieve Diverse Sharing

To meet the learning, communication, creation, and research activity needs of faculty and students in terms of space and resources, university libraries need to develop interactive creative shared space services: (1) Achieve the integration and unification of individual research and collaborative learning. Through learning, communication, and collaboration areas, leisure and personalized areas in interactive shared learning spaces, achieve the integration of “collaboration” and “conversation” to promote interaction among peers and environmental elements and achieve deep understanding of cognitive objects [80]. (2) Build a media sharing practice platform. Provide students with materials, tutorials, and interactive learning approaches for editing and creating audio, video, and graphic files, enabling students to have special experiences in digital creation and learning and helping to enhance their creativity [81]. (3) Use spatial services such as 3D library navigation to stimulate student innovation and creativity and achieve knowledge sharing goals (see).

4.4.2 Strengthening Innovation Literacy Education to Promote Professional Development

Using various forms to improve students’ information literacy and comprehensive quality [53], developing innovative and creative activities based on professional librarian service support to cultivate student capabilities and promote professional development, and providing innovation literacy education opportunities: (1) Strengthen innovation and entrepreneurship literacy education. Utilize the advanced equipment and free exchange spaces of interactive shared spaces to improve students’ innovation and entrepreneurship quality through creative markets, society activities, competitions, and reading experiences [82]. (2) Cultivate students’ active learning awareness. For example, Shenyang Normal University Library uses maker spaces and picture book spaces for picture book drama arrangement and performance activities to cultivate students’ independent learning abilities through independent reading, research, and practice [83]. (3) Provide online resources and remote learning pathways for students’ extracurricular learning and multi-degree learning, such as Shanghai Jiao Tong University Library’s IC2 program that combines information commons and innovation communities to launch smart ubiquitous classrooms that support students’ after-class learning and discussion [84].

4.4.3 Exploring Intelligent Interconnection Services to Promote Smart Innovation

Smart libraries are an important direction for the future development of university libraries under the “Double First-Class” background [5]. The investigation of 42 first-class university construction plans found that three first-class universities explicitly proposed building smart libraries and exploring intelligent information resource service paradigms to promote smart campus construction. To build intelligent, smart, and humanistic smart libraries, libraries need to: (1) Conduct creative activities for frontier technology experience and production, such as the “Image Supply and Reproduction” space equipped with 3D printers and laser cutters at Cambridge University Library [85]. (2) Provide immersive experiences and smart services. Use AR and VR human-computer information interaction technology to enhance users’ equipment usage experience and provide innovative services such as smart remote immersive training, reading, and personal AI learning [86]. (3) Use Beacon technology, RFID technology, strong association rule mining technology, etc., to achieve interconnection between independent literature information and readers and librarians, and provide integrated contextual information services based on users’ situational information [87]. Through the application of new technologies, new equipment, and other smart innovation elements, promote students’ active learning and stimulate their innovative spirit and capabilities.

Every rethinking of library functions and positioning occurs under specific historical and cultural backgrounds and is a process of continuously upholding tradition while innovating. Under the “Double First-Class” background, library functions and positioning should also advance with the times and continuously innovate. The International Federation of Library Associations and Institutions (IFLA) officially released the “IFLA Strategy 2019-2024: A Call to Action” [88] at its August 2019 conference, proposing new strategic goals: “To build a strong and united library field that empowers information professionals to promote literate, informed, and participative societies.” The four strategic directions are: (1) Enhance the global library voice—emphasizing presence; (2) Inspire and enhance professional capacity—emphasizing action; (3) Connect and empower the field—emphasizing collaborative integration; (4) Optimize organizational performance—emphasizing organizational value realization, planning library career development from a global perspective. Therefore, we should: (1) Break barriers, engage with the world, and change working methods; (2) Establish a global vision; (3) Inspire and enhance professional capacity to improve the overall level of the industry and achieve sustainable library development goals; (4) More strongly emphasize and demonstrate the status and role of libraries in world-class university construction. In summary, under the “Double First-Class” background, we must both “guard” tradition and expand service concepts, “encounter” functional evolution, and call for functional transformation. Only through reform at higher and deeper levels, systematic reshaping, and holistic reconstruction can we continuously deepen services and solve systemic obstacles. University libraries are on this journey.

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Author Contributions: Wang Qun: Participated in formulating research questions and designing research plans, collected, organized, and analyzed data and materials, wrote and revised the paper; Wang Qiong: Formulated research questions, developed research methods, guided research plans, revised the paper.

Rethinking the Functions and Positioning of University Libraries Under the Background of “Double First-Class” Construction

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Abstract: [Purpose/Significance] With the introduction of the overall plan and implementation methods for “Double First-Class” construction, universities have successively issued their construction plans. As the main institution supporting teaching, research, and learning in universities, the functions and positioning of university libraries play a crucial strategic supporting role in “Double First-Class” construction. [Method/Process] Using literature analysis, network survey methods, and scientific measurement software, this paper analyzes the current research and practice status of “Double First-Class” construction in Chinese university libraries. Based on the strategic requirements for libraries in the construction plans of 42 first-class universities in China and the mission planning of libraries at the top ten world-class universities in the U.S. News rankings, this study elaborates on the supporting role of university libraries in

“Double First-Class” construction, interprets the overall goals of “Double First-Class” construction for Chinese university libraries, reconsiders their functions and positioning, and clarifies effective pathways for libraries to achieve their construction goals and tasks under this new background. [Result/Conclusion] University libraries need to continuously uphold tradition while innovating, relying on the information resource guarantee center, disciplinary knowledge support center, cultural heritage exchange center, and interactive shared learning center to build an all-media information resource guarantee and sharing system that reflects their core competitiveness, a new service system that supports teaching and research throughout the entire process, a cultural cooperation system that comprehensively builds relationships between libraries and external entities, and an intelligent innovation system that organically integrates individual research and collaborative learning, thereby realizing the service functions of university libraries and demonstrating their service value.

Keywords: “Double First-Class”; Resource Guarantee; Subject Service; Cultural Heritage; Shared Learning; Functional Positioning

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

Source: ChinaXiv — Machine translation. Verify with original.