

Organizational and Practical Exploration of University Library Space Reconstruction from a Cultural Perspective: Postprint

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Abstract

[Purpose/Significance] Re-examining the spatial reconstruction of university libraries from a cultural perspective—integrating cultural elements into the space and conceptualizing the reconstruction process as a process of cultural cultivation—holds significant practical implications for enabling spaces to achieve service upgrading and cultural cultivation on the basis of functional improvement.

[Method/Process] Proceeding from a cultural perspective, this study conducts an in-depth analysis of the organizational and practical processes of university library spatial reconstruction, and engages in profound reflection on the methods and approaches for achieving service upgrading and cultural cultivation through such reconstruction, drawing upon the practical experience of spatial reconstruction at Northeastern University Library.

[Results/Conclusion] Examining university library spatial reconstruction through a cultural lens is more conducive to holistic planning and the realization of the educational functions of university library spaces.

Full Text

Exploration on the Organization and Practice of Space Reconstruction in University Libraries from a Cultural Perspective

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Abstract:

[Purpose/Significance] Re-examining the space reconstruction of university libraries from a cultural perspective, integrating cultural elements into the space,

and viewing the reconstruction process as a process of cultural education holds important practical significance for achieving service upgrading and cultural education on the basis of functional improvement. [Method/Process] From a cultural perspective, this paper deeply analyzes the organization and practice of university library space reconstruction. Combined with the practical work of space reconstruction at Northeastern University Library, it thoroughly considers the methods and approaches to achieve service upgrading and cultural education. [Result/Conclusion] Examining university library space reconstruction from a cultural perspective is more conducive to overall planning and realizing the educational function of university library space.

Keywords: university library; space reconstruction; space organization; space design; modular system; culture; cultural education; moral education

1 Research and Practice of University Library Space Reconstruction

The most prominent sign of a library's existence is its space [9]. Space reconstruction is generally driven by the need to update infrastructure, adapt to technological development, and respond to changing service demands [10]. Unlike new construction, space reconstruction is constrained not only by existing building structures and layouts but also by the cultural value of the original building. During the reconstruction process, it is particularly important to value the original cultural significance of the library building and leverage its cultural education function.

Foreign library reconstruction projects emphasize functional layout adjustment, coordination between internal and external environments, and sustainable development [11]. Since 1963, the American Institute of Architects (AIA) and the American Library Association (ALA) have jointly established the Library Building Awards, the most authoritative library design awards in the United States, recognizing newly built, renovated, restored, converted, and refurbished libraries both in the United States and around the world [12]. According to domestic researchers' statistics, by 2019, a total of 26 university libraries in China had received this award [11]. For example, the 2019 award-winning expansion and renovation of the University of Colorado's Tutt Library added seating, lighting, and new facilities, including a café, GIS laboratory, and data visualization facilities, transforming it into the college's knowledge center. The Barnard College-Milstein Center (library) constructed a series of flexible spaces including an empirical reasoning space, digital humanities space, movement laboratory, and computational science center to support pioneering research by students and faculty, representing a new form of library. Evidently, facility updates and space diversification are key focuses of attention.

In China, space construction issues attracted significant attention as early as the 1980s-1990s. For instance, the 1986 "University Library Architecture Semi-

nar” proposed five principles for library construction: avoid haste, ensure convenience and applicability, promote innovation, practice economy, and maximize overall benefits [13]. A search of CNKI using keywords such as “university (or college) library” and “space” or “architecture” or “building” and “reconstruction” or “renovation” (as of November 10, 2020) yielded 262 Chinese articles, relatively few compared to other topics in library and information science. The earliest articles date from 2002, when computer and network technology development prompted automation-related renovations. In 2008, research began on transforming university library electronic reading rooms into information commons [14]. Scholars have subsequently summarized reconstruction experiences through themed spaces [15], maker spaces [16], spaces in big data environments [17], and space reconstruction driven by “Internet Plus” thinking [18]. Others have examined and summarized reconstruction experiences from libraries in the United States, Japan, the Netherlands, and Singapore [19].

Excluding generic terms like “university library,” “space reconstruction,” and “building,” the main keywords focus on “service innovation,” “information commons,” “maker space,” “learning commons,” “space evaluation,” “space layout,” “electronic reading room,” and “service transformation.” Research has explored space functions and service innovation extensively, but there are fewer case studies on comprehensive reconstruction and practical implementation. More attention has been paid to characteristic spaces like “information commons” and “maker spaces,” while less emphasis has been placed on leveraging the educational function of space. Overall, early research prioritized tangible achievements, with insufficient attention to culture and implicit education.

In recent years, libraries at Tsinghua University, Peking University, Shanghai Jiao Tong University, and Chongqing University have led space reconstruction practices, with main characteristics summarized in Table 1 . Generally, these reconstruction practices have variously emphasized technology, culture, and space diversification. However, few studies have specifically examined space reconstruction from a cultural perspective, addressing holistic and concrete issues. Domestic scholars have also reflected on the cultural nature of library buildings, arguing that school libraries should emphasize humanistic concepts in education [26]. Lu Zhangping [8] believes that library space should reflect profound connotations and spiritual heritage while storing resources, rather than simply introducing so-called “culture” to cater to social trends or meet special functional needs during specific periods. Xiao Long [27] argues that university libraries need to create a cultural environment that feels like a spiritual home for readers. Wang Yu et al. [7] believe that university libraries are important carriers of campus culture, and space reconstruction should emphasize cultural environment construction and atmosphere cultivation.

2 Re-examining University Library Space Reconstruction from a Cultural Perspective

Culture is a product created by humans in social activities and serves as the root and means of education [1]. University libraries are both academic institutions serving talent cultivation and important bases for campus and social culture construction. Leveraging the spatial education function of university libraries is an important way to fulfill their mission. Library buildings and environments are crucial material foundations that university teachers and students can most directly experience and that play an educational role [2]. A scholar's survey of campus users' overall perception of campus space showed that, aside from the main university building, the library is the most recognized campus landmark [3]. Comrade Xi Jinping has emphasized that education should focus on cultural immersion, infection, and edification, valuing both explicit education and subtle implicit education to achieve the effect of "entering a room of orchids and becoming fragrant over time" [4]. As a representative building and spiritual landmark of the school, it is an inevitable requirement of our era that university library spaces integrate rich cultural elements, possess cultural warmth, sentiment, and character, and continuously provide cultural nourishment.

Currently, there are over 2,600 regular higher education institutions in China [5]. With facility usage and aging and constantly changing space demands, university library space reconstruction has become an important task for university libraries now and in the future. In his article "Revisiting Ten Hot Topics in Library Development," Wu Jianzhong provides an in-depth analysis of how libraries should respond to new changes through "space reconstruction" [6]. The reconstruction rate of university libraries in Hong Kong, Macao, and Taiwan has reached 70%, while the rate for 985 universities has reached 60% [7]. However, due to the lack of targeted and detailed guidelines, passive imitation or one-sided pursuit of novelty has led to trends of following fads and homogenization. While reconstructed library spaces have achieved infrastructure updates and equipment upgrades, appearing completely new on the surface, they lack cultural sophistication [8]. Culture is not merely the simple presentation of single elements but a comprehensive system encompassing material, spiritual, institutional, and behavioral culture related to human creation. Re-examining the process and practical effects of university library space reconstruction from a cultural perspective thus holds important practical significance. Therefore, this paper aims to analyze the organization and practice of university library space reconstruction from a cultural perspective, drawing on the practical experience of Northeastern University Library, to provide reference for university library space reconstruction.

Culture is a product created by humans that in turn acts upon humans, including both the process of creating lifestyles and the accumulated material and spiritual achievements. Ancient Chinese scholars stated in *Shuo Yuan · Zhi Wu*: "When sages govern the world, they prioritize cultural virtue before military force," emphasizing the important role of cultural virtue in educating the

world [28-29]. In contemporary times, the power and function of culture have gained even greater attention. Comrade Xi Jinping [30] has pointed out that “culture is the soul of a country and a nation.” In 2016, Xi Jinping emphasized at the National Conference on Ideological and Political Work in Higher Education [31] that “greater attention should be paid to educating people through culture, and extensive creation of civilized campuses should be carried out.” In 2018, at the National Conference on Propaganda and Ideological Work, Xi Jinping [32] pointed out the need to “promote culture” and emphasized “adhering to the path of socialist cultural development with Chinese characteristics and promoting the creative transformation and innovative development of excellent traditional Chinese culture.” As an important element of higher education, university libraries, as physical spaces with cultural nature and significance, should integrate excellent culture into every management element to become important positions for culture and education.

To analyze culture, academia generally divides it into several levels: material culture, spiritual culture, institutional culture, and behavioral culture [33-34], enabling better understanding and application of cultural elements from a micro perspective. Material culture refers to artifacts created through human labor, forming the foundation of the cultural system and the materialized expression of other cultural levels [28]. University library space falls under material culture, serving as a “container” and carrier for spiritual, institutional, and behavioral culture. Spiritual culture includes the deep cognition of the social environment by university teachers and students, their understanding of the university’s nature, characteristics, and operational laws, and the series of values formed in educational practice. Spiritual culture related to space reconstruction includes the core socialist values, excellent traditional Chinese culture, university mottos and academic ethos, and the guiding ideology and cognition of space reconstruction. Institutional culture encompasses the sum of various social relationships formed in the process of material production, focusing on organized management and operational rule systems created around goals, including management systems, institutional norms, and etiquette customs [35]. Institutional culture related to space reconstruction includes implementation plans, organizational methods, and safeguard measures. Behavioral culture refers to the process of human creation, dissemination, possession, and enjoyment of material, spiritual, and institutional wealth [36]. Behavioral culture related to space reconstruction includes activities associated with reconstruction. These cultural levels form an organic whole, closely connected, interdependent, and working collaboratively to enable culture to function comprehensively as a system. For example, under the dominance of specific spiritual culture, certain material, institutional, and behavioral cultures emerge; institutional, spiritual, and behavioral cultures all influence material culture. Their interaction relationships are shown in Figure 1 [Figure 1: see original paper].

Therefore, examining university library space reconstruction from a cultural perspective yields several insights: From a macro perspective: (1) The process of university library space reconstruction is a process of cultural creation;

(2) University library space, the people who construct and use it, and their related activities, rules, concepts, and spirit collectively constitute a cultural system; (3) The reconstructed library space is the material outcome of culture; (4) Both the process of university library space reconstruction and the reconstructed library space exert educational effects on university teachers and students. University library spaces that integrate culture can bring people spatial perception, atmosphere perception, and ultimately cultural perception, elevating readers' experience from physical experience to situational experience, further influencing their cultural quality, promoting ideological advancement, and triggering civilized behavior [37]. In coordination with other educational elements of the school, they jointly achieve talent cultivation goals. Simultaneously, through the process of using, constructing, and developing library space, teachers and students develop identification with and participation in the library space, achieving co-construction and sharing between teachers, students, and the library, positively impacting the library's cause and promoting teachers' and students' identification with and belonging to the university. From a micro perspective, university library space is a comprehensive reflection of spiritual, institutional, and behavioral culture; the practice of space reconstruction is a behavioral process influenced by behavioral, spiritual, and institutional culture. University library spaces that embody spiritual, institutional, and behavioral culture become unique, living materials and media, serving as important channels for infecting, influencing, educating, and shaping people (their effects on people are shown in Figure 2 [Figure 2: see original paper]) [38]. This paper attempts to re-examine the specific process and outcomes of university library space reconstruction from a micro perspective to better understand the internal laws of university library space reconstruction practice.

3 Space Reconstruction of Northeastern University Library from a Cultural Perspective

3.1 Implementation Background

The Ning Encheng Library of Northeastern University (hereinafter referred to as "NEU") was originally built and put into use in 1985. The building adopted the popular modular construction model at the time, with a total area of 16,010 square meters. It was the first independent library building established after the university's re-establishment on the basis of the former Northeast Institute of Technology. The library was renovated with donations in the name of Mr. Ning Encheng, the former secretary-general and acting president of NEU, thus possessing cultural value in recording important historical nodes of the university's development while fulfilling its service functions.

In terms of its role, the library receives nearly one million visits annually, placing it at the forefront of education. In terms of its campus environment, the building is located on the central axis of the campus, which accommodates resources and colleges such as Civil Engineering, Metallurgy, Materials Science and Engi-

neering, Mechanical Engineering and Automation, and Information Science and Engineering, as well as State Key Laboratories including Rolling Technology and Continuous Rolling Automation and Integrated Automation for Process Industries, creating a strong atmosphere of science and engineering disciplines. The library must not only provide literature and information resource services but also serve as an important cultural landmark on campus.

Therefore, through space reconstruction, the library aims to achieve infrastructure improvement, diversified space services, and full display of school culture, making the library a cultural landmark of the university [39].

3.2 Practical Features

3.2.1 Behavioral Culture Perspective: Endowing University Library Space with Cultural Warmth Through Full Participation Space reconstruction is a multi-party, multi-professional activity. During this process, involving teachers, students, and librarians in the reconstruction process integrates their wisdom, personality, and needs into the space, eliminating strangeness and alienation from the space and bridging the distance between university library space and people, making participants 自觉 become builders and maintainers of the space. Participation methods include holding space reconstruction design competitions, conducting special discussions with student representatives and “Reading Star” graduates, organizing all party member librarians and newly recruited librarians to visit other libraries, conducting research on space reconstruction literature, making field visits to multiple university libraries, and participating in the reconstruction process.

By compiling design descriptions, voting comments, and discussion opinions, reader needs were further focused: (1) Function and area were primary concerns, such as readers’ desire for areas to make phone calls and communicate while eating; convenient access to hot water and restrooms; sufficient self-study seats and power outlets; and relaxing leisure areas similar to cafés; (2) Comfort requirements became more specific, such as overall environment with “air conditioning,” “good sunlight,” “quiet and bright” spaces; (3) Cultural needs continued to rise, such as maintaining a stable image of the building’s appearance and preferring furniture with school logos. These opinions provided an important foundation for drafting the final design plan and safeguard work plan.

3.2.2 Spiritual Culture Perspective: Endowing University Library Space with Cultural Sentiment Through Great Love Culture University mottos, academic ethos, school spirit, and library management philosophies embody the deep cognition of the social environment by university teachers and students, encapsulating the university’s educational philosophy, cultural characteristics, and values, forming the core and soul of culture. As university libraries with service and education as primary functions, it is crucial to emphasize the integration of spiritual culture during space reconstruction. Constructivism advocates using the environment to create real situations that promote interaction

between people and the environment, helping learners acquire knowledge [41]. In China, the renowned philosopher Tu Youguang proposed the famous “pickle theory” in the 1990s, stating that “the taste of pickles depends on the pickle soup; the campus environment is like pickle soup, influencing and determining the spiritual outlook and behavioral style of students immersed in it” [42]. Integrating spiritual culture into university library space, making the space possess school characteristics and sentiment, is an important mission of space reconstruction.

- (1) Great love sentiment endows space with distinctive character. During reconstruction, the library organized staff to study traditional cultural works and school spirit culture achievements such as *NEU Traditions*, *Wandering Through NEU*, *Practical Work for National Service*, *Innovation and Excellence*, and *Fragrance Spreading from the Pavilion*, systematically sorting out the university’s development history and cultural characteristics and designing cultural elements to be presented in the space. The university’s motto spirit of “self-improvement, integration of knowledge and action,” its academic pursuit of serving national and regional development strategies, and its great love ideology of “loving the school, hometown, country, and humanity” were integrated into the space reconstruction, endowing the library space with soul and life.
- (2) Spirit of responsibility endows space with profound strength. This is reflected in: (1) Excavating and presenting specific examples of Northeastern University’s historical relocations and students’ dedication to learning despite difficulties. During the university’s time in Beijing, due to financial constraints, there were extremely few books and facilities; without a reading room, only a small number of donated books were placed in a corner of the dormitory, yet teachers and students still competed to read [43]. Based on this example, the “Reading Society” space was designed during reconstruction as a special place for students to review history, conduct student activities, and inherit excellent academic traditions. (2) Centering on the university’s distinctive features of developing China’s first super steel, new vanadium-titanium magnetite smelting technology, energy-saving theories and technologies for the iron and steel industry, controlled rolling and cooling technology, and hybrid intelligent optimization control technology, special collection and display spaces were constructed to comprehensively, three-dimensionally, and vividly present disciplinary culture. (3) The naming of the library building and presentation of Mr. Ning Encheng’s deeds. Mr. Ning Encheng served as NEU’s secretary-general and acted as president during the university’s founding crisis; in the 1990s, he made significant contributions to NEU’s name restoration; on the occasion of the university’s 80th anniversary, his wife and children donated funds in his name to renovate library facilities [44]. A statue of Ning Encheng was placed outside the library, and a Ning Encheng exhibition hall was set up inside, displaying his life deeds through photos, manuscripts, appointment letters, etc., highlighting his important contributions to the university’s

founding, name restoration, and rapid development.

- (3) Overall situation awareness endows space with contemporary characteristics. The reconstruction process inevitably impacts existing services. Teachers and students establishing overall situation awareness and overcoming temporary difficulties became important guarantees for space reconstruction. During the library's reconstruction period, a series of promotional content spanning a long timeline was released on the library's WeChat platform, actively publicizing the arduous reconstruction process and exemplary individuals to gain more understanding from teachers and students. Additionally, the party branch secretary delivered a special report titled "Never Forget the Original Aspiration, Keep the Mission in Mind—Studying Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era to Create a Good Cultural Environment for Teachers and Students," understanding the important role of university libraries from a cultural perspective, expanding the vision of backbone staff, making them an important force in explaining and communicating with teachers and students, and building broader consensus on constructing cultural spaces. The willingness of teachers and students to overcome difficulties together created spiritual support for library space reconstruction, with the embodied overall situation awareness being forged into the university library space and becoming an important component of school spirit.

3.2.3 Institutional Culture Perspective: Endowing University Library Space with Cultural Character Through People-Oriented Principles

Implementation plans, organizational methods, and safeguard measures are institutional guarantees for university library space reconstruction. Unlike new library construction, space reconstruction must consider not only the transfer or protection of existing equipment and facilities but also how to compensate for the needs of readers accustomed to using the original building, minimizing perceived service gaps [45]. It must consider not only on-site reconstruction work but also how to conduct library services during the reconstruction period, as well as pre-arranging post-reconstruction opening work. Based on humanistic care, a safeguard institutional system was formed to allow readers to genuinely experience the library's people-oriented service character.

- (1) Overall coordination system for various tasks. At the beginning of the reconstruction work, a safeguard work plan was formulated, establishing a leadership group, safety work group, relocation work group, data work group, and technical support work group, with dedicated personnel organized for division of labor and collaborative work. During the reconstruction process, an engineering regular meeting system was established for timely communication on specific issues. In the post-engineering period, flower rental plans and signage system construction plans were formulated in advance, coordinating property cleaning, flower rental, and signage in-

stallation services, and organizing special applications for supporting furniture, information equipment, and compact shelving projects to ensure timely opening after construction and subsequent entry of supporting facilities.

- (2) Project system for specialized work. University library space is a complex systems engineering project involving multiple specialties that cannot be fully undertaken by a single librarian or department. This library used a project system to ensure comprehensive participation of specialized talents in specific tasks, operating some individual tasks in the space reconstruction work through project-based methods, allowing cross-departmental team organization, resource support, and expert guidance to better complete urgent, temporary, and complex tasks. Projects such as the “‘Chinese Academy · Chaoxing Cup’ Northeastern University Nanhu Campus Library Space Reconstruction Design Competition,” “Northeastern University Ning Encheng Library Building Beautification,” and “Northeastern University Library Signage System Design” were used to complete related supporting work [46].
- (3) Compensation system to meet reader needs. This includes increasing borrowing quotas and extending loan periods for readers, as well as remote borrowing and returning systems.

3.3 Implementation Effects

3.3.1 Emphasizing Behavioral Culture: Bringing Teachers and Students Closeness, Presence, and Belonging to Provide Prerequisites for Cultural Education The foundation or prerequisite of education is acceptance [47]. A reader-centered approach that emphasizes teacher and student participation brings them closeness, presence, and belonging to the university library space, laying the foundation for the library’s educational function.

- (1) Functionally, achieving integration of collection and use with emphasis on use. Space reconstruction absorbed reader opinions. Through coordinated arrangement of literature between multi-campus libraries and increased dense storage, traditional collection space was reduced. Original spaces were integrated and reconstructed to enable diversified space needs. After reconstruction, new collaborative and leisure spaces were established, including research areas, tea rooms, coffee book bars, and reading experience rooms. Quiet learning spaces such as reading rooms increased by 40% compared to before; cultural education spaces such as the NEU Archives, Republic of China and Local Documents Library, and Zhixing Reading Society increased by 1.2 times. Specific space functions and distributions are shown in Table 2 .
- (2) In layout, achieving separation of dynamic and static areas with reasonable circulation. After more than 30 years of use, changes and adjustments in service methods and content have made the spatial arrangement and traf-

fic flow between spaces in the library 不适应。Many reader feedback issues focused on conflicts between staff office communication and readers' quiet use needs. The original layout placed staff offices and meeting rooms on various floors, centrally located between north and south, with long and mixed staff circulation routes crossing reader use areas. According to the *Library Building Design Code* (JGJ38-2015) [48], library building layout should reasonably arrange circulation routes between acquisition, cataloging, collection, and borrowing functional areas to make them convenient and unobstructed without mutual interference. The library space was integrated and adjusted accordingly.

Quiet learning areas on the second, third, and fourth floors were integrated and concentrated on the north and south sides of the building, with good lighting and transparency and minimal interference. Tea rooms, coffee book bars, reading experience rooms, and Chinese studies rooms were located in the central building area, surrounding auxiliary spaces like restrooms that could not be moved. The distance from each reading room to leisure spaces was equivalent, and with atriums as separation, dynamic and static spaces were relatively independent, thus avoiding mutual interference. A specific floor is shown in Figure 3 [Figure 3: see original paper], where both north and south sides are integrated into large open-shelf reading spaces, making the overall layout more regular and circulation routes more suitable for use needs. Additionally, office staff and dense stacks were concentrated on the first floor, leaving better upstairs spaces for readers.

Integrated and released spaces and redundant original corridors were supplemented into reading spaces to make them more regular and spacious. Exhibition halls, archives, and Republic of China and local documents libraries with strong display and educational functions were concentrated on the second floor—the reader entrance floor—to align with reader flow and facilitate full utilization. The third and fourth floors focused on relatively quiet reading, learning, and research.

- (3) In perception, achieving commonality while meeting individuality. The entrance was adapted to Northeast China's climate by replacing it with automatic revolving doors. More than 100 power outlets were added to walls and columns, more than doubling the original number. WIFI and mobile signal enhancement facilities were added, making electronic equipment more convenient to use. Due to various constraints, multi-split air conditioners were partially installed to meet reader comfort needs.

New research areas, tea rooms, coffee book bars, and reading experience rooms were located in central positions on each floor, convenient for readers to access and use. Public areas were arranged with reading booths, waterfall screens, disinfection machines, and other new facilities that better conform to personnel flow patterns and meet readers' communication and learning needs. The NEU Archives, Republic of China and Local Documents Library, Reading Society, and Party Member Activity Room centrally display special collections and provide

diversified support for teacher-student interaction.

Students use library spaces for reading marathons, volunteer services, discussions, and reading activities; teachers use spaces for project discussions, thesis defenses, and meetings; librarians use spaces to organize librarian salons, themed book exhibitions, graduate reading star selection, and human library activities. In excellent teacher and student stories pushed by the university's official Weibo and WeChat accounts, multiple library venues have become backgrounds that teachers and students are happy to use; during graduation season, the library has become a must-visit check-in location.

3.3.2 Emphasizing Spiritual Culture: Bringing Teachers and Students Identification, Pride, and Mission to Provide the Core for Cultural Education

- (1) “Repairing the old as old” provides support for education. “Repairing the old as old” is a classic principle in cultural relic protection and renovation in China. The preservation and representation of old objects can evoke memories and stimulate pride among teachers and students, prompting spontaneous and conscious inheritance and innovation. Drawing on this principle, the practice of “repairing the old as old” and combining old and new in university library space reconstruction allows old objects to remain timeless and realize cultural education value. For example, the original terrazzo floor reflected good grinding and polishing technology at the time and remains smooth and new after years of use; after consideration, it was retained and new structures and materials were coordinated with it in the renovation. At the entrance, there was a jade wall donated by an alumnus from the Mining Department. The wall was preserved and surrounded with matching stone materials, making it a record of alumni memory and a 名片 of advantageous disciplines. The statue of Jin Shuliang inside the library was preserved unmoved and protected and decorated. The statue commemorates Jin Shuliang, a renowned iron-making expert, academician of the Chinese Academy of Sciences, and first president of Northeastern Institute of Technology (now Northeastern University). Located in an important position in the second-floor circulation hall, the statue highlights NEU's traditional disciplinary advantages in metallurgy while being surrounded by green plant landscapes, flowing water bonsai, rattan chairs, and street lamps to create a cultural landscape for passing readers to rest, contemplate, and read, imperceptibly inspiring them to grow under the influence of the older generation of NEU people's spirit of serving the country and dedicating themselves to their industry.
- (2) Strengthening the essence to firm up the direction of education. The university motto is the core and essence of school culture and spirit and a comprehensive reflection of the spirit of the times. Northeastern University's motto is “self-improvement, integration of knowledge and action,” where “self-improvement” comes from the *I Ching's* “Heaven's movement

is vigorous; the superior person constantly strives for self-improvement,” and “integration of knowledge and action” was inscribed by the university’s first president, Wang Yongjiang, at the inaugural student ceremony [49]. Over the years, the motto spirit has become deeply rooted in people’s hearts, becoming the common spiritual character and intrinsic trait of NEU students. Under the guidance of core socialist values, it inspires NEU people to continuously pursue “practical work, serving the country, innovation, and excellence.” During reconstruction, the existing column at the entrance of the NEU Archives was used to create a motto wall. The front of the motto wall displays the standard school emblem and motto characters, while the back explains the motto. Located near the main entrance where readers can easily access and where personnel flow is heavy, it not only avoids the awkwardness of a single column blocking the entrance but also conforms to the traditional cultural function of shielding before entering a house, while serving as an important cultural landscape.

- (3) Emphasizing moral establishment to accumulate heritage for education. Education is a “major plan for the country and the Party.” General Secretary Xi Jinping emphasized at the National Education Conference that we should adhere to aesthetic and cultural education to improve students’ aesthetic and humanistic qualities [50]. As a multi-disciplinary university emphasizing engineering, the cultivation of humanistic literacy is an important foundation and an important mission of the library. This library is one of the 100 collection units of the *Chinese Reproduced Rare Books* nationwide, collecting large-scale cultural classics such as the Wenjin Pavilion *Siku Quanshu*. After space integration, the Chinese Studies Room was reconstructed in Chinese style, allowing teachers and students to grow in a rich humanistic environment, including constructing Chinese-style screens to divide indoor space, configuring tea tables and calligraphy tables to match the decorative style, and building an entrance screen wall with excerpts from the *Tao Te Ching* by Laozi, the earliest library curator in Chinese history as the “Keeper of the Archives” in the Zhou Dynasty, written in calligraphy by a university teacher and rubbings made on the wall. The library building is generally “field”-shaped, with the Chinese Studies Room located in the center. The screen wall rubbings selected the passage “The highest good is like water...” implying that traditional culture is the source of wisdom, the root of spirit, and the foundation of development, continuously nourishing the growth of teachers and students, reminding them to always cultivate their moral character and establish themselves with virtue.

3.3.3 Emphasizing Institutional Culture: Bringing Teachers and Students Security, Happiness, and Superiority to Provide Guarantee for Cultural Education During the reconstruction process, the integration of overall coordination, project system, and compensation system maximized resources and capabilities and the needs and wisdom of multiple stakeholders,

ensuring that the overall reconstruction effect could meet the needs of various groups. The space reconstruction received positive reader feedback, with the Ning Encheng Library being listed among the top ten cultural and artistic venues in Shenyang's Cultural and Artistic Evaluation List. The decoration project won the 2019-2020 China Construction Engineering Decoration Award. The simultaneous reopening of the renovated and new libraries brought a significant increase in visits. In 2019, the library received 1,480,155 visitors, a 68% increase from the previous year (the 2020 annual figure was affected by the pandemic and not fully open; estimated actual figures were comparable to 2019). From the trend of declining borrowing volumes year by year and significantly increasing online visits, readers primarily use the library's on-site space services and electronic resources.

During the initial trial period, comprehensive understanding of reader perception provided a basis for dynamically adjusting reconstruction outcomes. To better understand reader perception, we recorded reader comments at opening, totaling more than 200 entries. Readers fully expressed their joy about the reopening. After a period of use, Shenyang's Cultural and Artistic Evaluation List tags showed "good environment," "tall and upscale," "leisure for multiple people," "relaxing and comfortable," "clean and tidy," "fresh and elegant," etc. Representative excerpts of comments and online reviews are organized in Table 3 .

During use, institutional construction continued to be strengthened, such as formulating operation guarantee and service demand plans, safety culture construction implementation plans, and the *Northeastern University Nanhu Campus Library Research Room Service Guide* to ensure better space utilization from multiple aspects.

4 Summary and Reflection

4.1 University Library Space Reconstruction is Systematic Engineering: Endowing Cultural Functions Through Cultural Thinking

University libraries, as cultural landmarks, academic sanctuaries, and spiritual homes of universities, are not merely tangible, superficial, material entities but require spirit and soul. University library space reconstruction should be regarded as systematic engineering, led by cultural thinking: (1) Fully emphasize the cultural function of university library space. As important campus landmarks, university libraries should gather and present school traditions and cultural essence, reflecting the characteristics of the specific university and library while conforming to universal library space rules. They should deeply excavate, interpret, and present the essence of excellent traditional Chinese culture to help teachers and students establish cultural confidence and implant the foundation of Chinese culture. Based on value concepts and cultural heritage, the planning layout, functional areas, cultural landscapes, greening and beautification, and literature resources of university library spaces will comprehensively function to

continuously exert educational effects on teachers and students [51]. (2) Organize the cultural representation of university library space orderly. The in-depth analysis of material, spiritual, institutional, and behavioral culture provides implementation references for deeply understanding the university library space reconstruction process. Identifying focus points and footholds from these levels enables better re-examination of university library space reconstruction from a cultural perspective. However, it should be noted that these levels are not separate, independent entities but different elements within the cultural system that need to function synergistically. (3) Do not neglect external coordination of university library space. University library space reconstruction should pay attention to changes in external culture, concepts, and styles, making it an organic, coordinated component of the university.

4.2 University Library Space Reconstruction is Open Engineering: Endowing Cultural Personality Through Cultural Spirit

University library space reconstruction is not only the library's own work: (1) It should be considered within the university's overall development plan. The university party committee standing committee should review the overall plan, safeguard measures, cultural positioning, and cultural elements of university library space reconstruction from a macro perspective, providing organizational guarantees for the library to better inherit and innovate school culture and fulfill educational functions. (2) It should absorb full participation from teachers and students. School culture itself is a product created by school teachers and students and acting upon them. Library space is not only a place serving school teachers and students but also material foundation recording their traces and accumulating their achievements. Teachers and students participating in library space reconstruction and fully expressing their usage needs can make library space closer to individual teachers and students, stimulating their willingness for co-construction and sharing and triggering their cultural recreation behavior. (3) It should gather collective wisdom of librarians. Librarians are managers, users, and builders of university library space, understanding the library's current situation, history, and operational laws, and serving as bridges and links for university library space to possess cultural personality and fulfill educational functions. In practice, librarians organize the relocation, protection, or moving of items in the library, participate in the entire construction process, and coordinate relevant parties such as teachers and students, moving companies, property companies, and suppliers. Leveraging librarians' strength enables timely discovery of details that do not meet needs for adjustment at the most appropriate time; enables division of labor around overall reconstruction goals for supporting work such as material selection, item relocation, furniture configuration, equipment configuration, environmental beautification, and system identification; and enables librarians to better understand the concepts and functions of university library space reconstruction to better utilize library space in subsequent work.

4.3 University Library Space Reconstruction is Dynamic Engineering: Endowing Cultural Life Through Cultural Rules

University library space reconstruction is a changing, developing, and sustainable process. Once the layout and areas of university library space are determined, large-scale changes are unlikely in the short term. However, subsequent micro-level functional realization, furniture, equipment, and decoration configuration, and construction and use rules still have considerable room for change. These are also important components of space reconstruction. On the one hand, on the basis of respecting the overall plan of university library space reconstruction, the work of space function realization should continue. Library space reconstruction is a long-term project. Subsequent work will inevitably be affected by personnel changes, cognitive changes, and external conditions. It should follow the laws of cultural construction, minimize the randomness and arbitrariness of space reconstruction, and achieve orderly organization, organic continuation, and overall realization of cultural elements based on the overall plan. A disordered, unstable cultural system will only cause mutual consumption and confrontation among elements, restricting the educational function of university library space [38]. The spiritual connotation and cultural function carried by university library space should always be adhered to and protected. On the other hand, teachers' and students' use of library space may promote cultural recreation. On the basis of maintaining relative stability, attention should be paid to tracking, researching, and analyzing the usage of specific spaces after reconstruction, laying a solid foundation for subsequent recreation work, enabling the cultural system of university library space to continuously absorb promoting forces for benign self-renewal, and more fully and vividly demonstrating its cultural essence and functioning.

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