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## Self-Cultivation and Scholarship: Integrating Knowledge and Action; Teaching by Precept and Example: Cultivating Excellent Talents—An Overview of Meng Liansheng’s Academic Thought in Library and Information Science and Graduate Student Training (Postprint)

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### Abstract

**Purpose/Significance** To explore Mr. Meng Liansheng’s academic thought and practical journey, understand from a particular perspective the developmental trajectory of China’s library and information science undertaking, and provide experience and reference for future academic exploration and progress. **Methods/Process** Comprehensively employing content analysis, bibliometric methods, interview techniques, and other approaches, various types of materials and data were collected, organized, and analyzed to form research conclusions. **Results/Conclusion** Mr. Meng has been courageous in academic exploration, pursued practical innovation, and pioneered research and construction of citation databases in China. He has made significant contributions to the essential relationship between scientific research and information science, development of library and information science, construction of scientific and technical information resources, retrieval of scientific and technical literature information, and theory and practice of digital libraries. His spirit of rigorous scholarship, profound accumulation, seeking truth from facts, and relentless pursuit of perfection in “refining words” is truly admirable. His teaching style of tireless instruction, tailored teaching, being both teacher and friend, and teaching by personal example—“moistening things silently”—commands the respect of his students.

## Full Text

### Abstract

[Objective/Significance] This study examines Professor Meng Liansheng’s academic thought and practical journey to understand the development trajectory of China’s library and information science (LIS) field from a unique perspective, providing experience and reference for future academic exploration and progress. [Method/Process] This research comprehensively employs content analysis, bibliometrics, and interview methods to collect, organize, and analyze various types of materials and data, forming research conclusions. [Result/Conclusion] Professor Meng demonstrates courage in academic exploration and pursues practical innovation, pioneering research and construction of Chinese citation databases. He has made significant achievements in the essential relationship between scientific research and information science, development of literature and information services, construction of scientific and technological information resources, retrieval of scientific and technical literature, and digital library theory and practice. His rigorous scholarship, accumulation of knowledge, pursuit of truth from facts, and excellence in the “character-refining” spirit are admirable. His “moisturizing things silently” teaching style—tireless in instruction, teaching according to aptitude, being both teacher and friend, and teaching by precept and example—is deeply respected by his students.

**Keywords:** Meng Liansheng; Academic Thought; Innovative Practice; Personnel Training

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Over the 40-plus years since China’s reform and opening up, the nation’s library and information services have achieved considerable development. Access to and utilization of information resources have continuously improved, and the capacity to guarantee scientific and technical literature has significantly enhanced, playing a crucial supporting role in the advancement of China’s science, technology, and education. Since beginning his studies at Peking University in 1975, Professor Meng Liansheng (hereinafter referred to as “Professor Meng”) has forged an indissoluble bond with the LIS profession, steadfastly dedicating himself to China’s library and information cause. This study systematically reviews and examines his academic research, practical journey, and major contributions and influences from the perspectives of theoretical exploration, practical innovation, academic style, and academic inheritance.

## 2. Research Methods

This study comprehensively employs content analysis, bibliometrics, and interview methods to organize and analyze collected materials and data, forming research conclusions.

## 2.1 Data Collection

Collected data involves two types: source documents and citation literature. Using “Meng Liansheng” as the search term in the author field, we retrieved from CNKI, Chongqing VIP, Wanfang Data, Web of Science, and EI Engineering Village, obtaining 118 Chinese and English academic articles published independently or collaboratively by Professor Meng. Citation literature was retrieved using Professor Meng as the cited author on the same platforms, yielding 2,361 citation documents related to his academic articles.

## 2.2 Data Classification

Based on retrieved literature, Professor Meng’s publications were categorized thematically into four domains: bibliometrics and citation database construction, library and information service development, resource construction and scientific literature retrieval, and digital library theory and practice. Table 1 reflects the number of publications, citation counts, and average citations per paper across these four major research themes throughout his academic career.

## 2.3 Data Analysis

Content analysis was applied to examine research themes, objects, data, methods, and main contributions. Statistical analysis was conducted on publication counts, citation frequencies, and average citations per paper across different themes. Additionally, content extraction was performed on articles citing and reviewing Professor Meng’s work to objectively reflect the academic value and social impact of his research.

## 2.4 Empirical Analysis

Interviews were conducted to collect Professor Meng’s perspectives and methods on personnel training. Seven PhD students supervised by Professor Meng were interviewed, gathering their experiences during their studies. Materials collected included but were not limited to study diaries and excerpts from dissertation drafts with Professor Meng’s comments, totaling 66 documents, aiming to present firsthand accounts of his dedication to academic inheritance and his deep love for the profession and students.

## 3. Courageous Academic Exploration and Pursuit of Practical Innovation

### 3.1 Integration and Mutual Promotion of Academic Career and Professional Experience

Since joining the Chinese Academy of Sciences Library after graduate school in 1982, Professor Meng has held multiple positions in library and information construction and management, including head of the literature retrieval

group, reference department secretary, reform and professional appointment of office staff, deputy director of the business department, director of the database department, deputy director of the “Distributed Automated Integrated System” project, head of the “Data Research and System Implementation” project team, office staff of the Chinese Academy of Sciences Publication and Library Committee, director of the Chinese Academy of Sciences Digital Library (CSDL) office, and director of the database construction department at the National Science and Technology Library (NSTL). With his theoretical knowledge, work capabilities, and dedicated attitude, he successfully fulfilled each position’s responsibilities and achieved outstanding results in several areas. These varied practical experiences provided realistic demands and rich materials for his academic exploration.

Professor Meng’s research achievements are closely related to his frontline LIS practice and keen observational skills. After graduating from Peking University in 1977, he immediately began working in LIS, primarily engaged in acquisition, classification, and cataloging of foreign literature. To better fulfill his duties and enrich his professional theoretical knowledge, he persistently studied English during his spare time, continuously read professional literature, and kept abreast of academic developments in his field, laying a solid foundation for his subsequent admission to the Chinese Academy of Sciences Library’s newly established graduate program.

In his second year of graduate studies, through Professor Zhou Wenjun’s course at Peking University, Professor Meng gained new understanding of the essence of “information” and “information work,” publishing his first academic article titled “Preliminary Analysis of Information, Information Carriers, and Information Work” in *Information Science*, proposing the core argument that “information is an inherent attribute of all things.” During graduate school, his analysis of Chinese scientific citation index principles and methodological exploration embodied his determination to strive for independent development of China’s literature and information services. Building on his dissertation research, Professor Meng facilitated the Chinese Academy of Sciences Documentation and Information Center’s application for a National Natural Science Foundation project to develop the “Chinese Science Citation Database,” organizing the project team to successfully create both print and CD-ROM versions of the Chinese Science Citation Index, advancing the continuous development of the Chinese Science Citation Database.

After NSTL’s establishment in 2000, Professor Meng began a “dual” work mode between the Chinese Academy of Sciences and NSTL offices. Throughout his long-term practical exploration, he consistently adhered to the principle that “theory originates from practice and guides practice,” conducting theoretical exploration based on practical work and writing numerous academic articles that in turn guided practice. For example, many arguments presented in his articles “Several Thoughts on Developing China’s Digital Library Cause” and “Constructing China’s Scientific and Technical Literature Information Compre-

hensive Guarantee System with an Innovative System” were reflected in NSTL’s construction and development, playing a positive role in advancing China’s scientific and technical literature guarantee system.

### 3.2 Leading Bibliometrics Innovation and Pioneering Citation Database Construction

Citation analysis theory and application constitute an important aspect of bibliometrics. Through citation analysis, we can qualitatively and quantitatively reveal the internal connections and essential characteristics of scientific research and scientific communication. Since publishing his first citation analysis article in 1983, Professor Meng has maintained high attention to this field.

In the early stages of this research theme, Professor Meng observed that domestic theoretical discussions and applied research on citation analysis methods were still in the preparatory stage, with limited articles in relevant journals mostly 停留在名词解释和对国外研究情况的一般性介绍上. Articles applying citation analysis methods to domestic research topics were extremely rare [2]. Therefore, he insisted on empirical research, investigating and analyzing citation phenomena in major natural science discipline journals in 1980, mapping the citation structure of Chinese natural science papers, and conducting various attempts at citation analysis applications regarding the half-life of Chinese scientific journals and citation relationships among them.

To promote practical application of his research findings, Professor Meng independently or collaboratively published multiple academic articles in the 1990s, systematically discussing the development status, existing problems, application prospects, and development strategies of China’s citation database construction. From perspectives of literature distribution, citation analysis, citation relationships, bibliometrics, and scientometrics, and using literature distribution data, citation data, discipline information of CAS academicians, and patent documents as research objects, he systematically revealed the distribution of China’s scientific and technical literature, reflected the research output of major Chinese academic institutions, described the citation structure and patterns of Chinese scientific literature, tentatively selected core authors in some Chinese disciplinary fields, and demonstrated the status and patterns of generation and application of China’s scientific and technical literature with abundant data, providing multifaceted application demonstrations for promoting bibliometrics development in China.

Regarding Professor Meng’s research in citation analysis and bibliometrics, domestic scholars have given high praise. Shi Jihong and Li Zhiping noted [3] that in 1982, when completing his master’s thesis, Professor Meng experimentally established China’s first “Chinese Science Citation Database,” pioneering Chinese scientific citation analysis. Feng Xuefeng [4] affirmed his innovative research on using citation counts and impact factors to evaluate journal quality. Gu Yuelin [5], through data analysis, evaluated Professor Meng’s “Chinese Science Cita-

tion Analysis” as one of 76 classic works in Chinese LIS in the 1980s, which won an Excellent Paper Award from the Chinese Library Society. E. Krauskopf [6] and A. Gazni [7] also gave positive evaluations of his collaborative research on the relationship between patent citation behavior and journal paper citation behavior.

### **3.3 Exploring the Essential Relationship Between Scientific Research and Information Science, Expanding Development Space for Literature and Information Services**

Professor Meng’s research on literature and information service development began early with substantial achievements. As shown in Table 1, he published 30 academic articles on this theme, starting from basic elements of the LIS profession—information, information carriers, scientific research, and scientific communication—to explore LIS management, reference services, literature database construction, network resource archives, Chinese journal evaluation, open access to information resources, network application standards, digital information resource integration, NSTL management and operation models, space reconstruction of art college libraries, professional literature publishing, and information-seeking behavior of researchers.

Professor Meng’s contributions can be summarized in three aspects:

#### **3.3.1 Disseminating J.D. Bernal’s Information Science Thought**

In his early research activities, Professor Meng emphasized professional knowledge accumulation and revealed the relationship between library and information work and modern science and technology based on Bernal’s information science thought. In his article “Preliminary Analysis of Information, Information Carriers, and Information Work” [8], he elaborated the core idea that “the wholeness and complexity of science have developed to such an extent that libraries and information institutions have become key to whether people can consciously advance the entire frontier of progressing knowledge.” This undoubtedly elevated library and information work to an academic height closely connected with scientific and technological development, highlighting its important value and significance for technological innovation. He emphasized that “the development of science and technology will become more dependent on library and information work. Since its establishment, UNESCO has always regarded promoting the development of international and national, especially developing countries’, library and information services as an important development project. Information science thought and theory are of great significance to the development of science and technology.” More than forty years later, as human society has entered the digital age, information acquisition, dissemination, and utilization—or information services—increasingly demonstrate their important role in social development.

#### **3.3.2 Elaborating on the Dynamic Development Characteristics of Information**

Professor Meng posited that information is an entity in a state of transmission that can cause matter and energy to combine and change in certain ways. Information is an inherent attribute of all things, the basis and element that makes one thing distinct from others. It determines the nature of things and their development and change patterns. Information itself changes with the development and changes of things and perishes with their demise. Once people master the information constituting a certain thing, they can use this information, through consumption of “energy,” to organically combine the various components of that thing, thereby reproducing it. Professor Meng’s description of the dynamic development of information reveals its essential characteristics from one perspective, promotes deepening of basic theoretical research in information science, and provides important reference value for better conducting library and information work.

### **3.3.3 Exploring the Essential Relationship Between Scientific Research and Information Science**

Scientific research is a human cognitive activity. From an information perspective, research activities aim to understand and study the information of various research objects—their nature, changes, and transmission patterns. Professor Meng pointed out [9] that the essence of scientific research is to describe information about objective things that people cannot perceive or understand in forms such as language, text, and data that people can comprehend, forming what is commonly called scientific information. Scientific research is the process of discovering and understanding information, “translating” implicit scientific information into explicit scientific intelligence. Scientific communication solves the problem of transmitting scientific intelligence, delivering scientific intelligence stored on different carriers to users in need through various means, making scientific intelligence originally existing in “some corner” available to those who need it. Without scientific communication, scientific intelligence would not be disseminated and utilized, and science would not achieve sustained development. Professor Meng’s incisive exposition on the essential relationship between scientific research, scientific communication, and scientific information work reveals the inseparable relationship between modern scientific research and library and information work, and clarifies the significant role of library and information work in promoting scientific progress and social development. Viewed from decades of development of China’s library and information profession, these arguments are remarkably incisive and profound.

Today, when the LIS field seeks its social value and significance, it still explores its developmental positioning and value space in each transformation of research communication paradigms from the perspectives of scientific communication and research. For instance, LIS scholars’ attention to the open access movement and emphasis on scientific data management and services exemplify LIS professionals’ efforts to contribute to scientific research. As scientific data enters the domain of scientific communication, the carriers of scientific communication have gradually expanded from academic articles—the primary medium

for presenting research results—to scientific data—the substantive expression of research results. In recent years, Registered Reports (RR) launched by the Center for Open Science (COS) have further advanced the timeline of scientific communication and sharing [10]. Under RR’s promotion, researchers can publish and exchange their research ideas with peers in a timely manner when forming research proposals if they wish [11]. Driven by the open science concept, forms, carriers, and channels of scientific communication have become more flexible and diverse. As Professor Meng stated, “If a scientist’s research results are not understood by others or necessary repetitive experiments are not conducted, his work will not be recognized” [8]. Without communication, there is no research, and without LIS, there is no research. Professor Meng’s early exposition accurately reveals this interdependent, coexistent relationship between research and communication.

### **3.4 Exploring Scientific and Technical Literature Retrieval, Advancing Scientific Information Resource Construction**

Whether in the paper era or the digital age, library and information materials, and various digital information and data resources, have always been the foundation of library and information institutions’ external services. Professor Meng conducted extensive exploration in resource construction and scientific literature retrieval, with research findings concentrated in his academic articles and teaching materials in print and CD-ROM formats.

Resources are to library and information institutions what water is to fish. In the digital age, libraries’ resource procurement models have evolved from traditional “purchase-local ownership” to “purchase-remote access.” Faced with various uncontrollable factors, LIS professionals enjoy the convenience of digital resources while worrying about risks associated with the inability to locally preserve most subscribed digital resources. As early as 40 years ago, when first encountering SCI as a graduate student, Professor Meng was inspired to “compile China’s own scientific citation index.” With deepening theoretical research, he eventually developed this initial inspiration from theoretical prototype to experimental project, and ultimately into an operational tool for literature retrieval and scientific evaluation with independent intellectual property rights. In the 1990s, drawing on his experience in constructing the Chinese Science Citation Database and his involvement in organizing and managing multiple literature database construction projects at the Chinese Academy of Sciences, Professor Meng published numerous articles on citation database and literature database construction. During the initial period of literature database development in China, his practice and insights in resource construction, particularly digital resource construction, played a positive role in promoting the field’s development.

Professor Meng’s research in resource construction and scientific literature retrieval can be divided into three aspects: (1) Discussion on standardized description and organization of library and information resources, such as introducing

the nature and scope of MARC tape distribution office subject authority files. (2) Exposition on the significance of digital construction of literature information resources, advocating for “strengthening digital construction of literature information resources” and “improving information service levels by accelerating resource construction.” (3) Summaries of practical work experience in literature information resource construction and data processing management, comprehensively discussing his practical experience and reflections from perspectives of literature data processing, joint data processing systems, numeric databases, dissertation databases, information resource co-construction and sharing, and digital information resource integration. As resource construction developed, Professor Meng also paid attention to the application of ontology and other methods and technologies, exploring ways to improve organization and retrieval efficiency of information resources and enhance information service levels based on digital resources.

### **3.5 Participating in China’s Digital Library Construction Practice, Advancing Digital Library Theoretical Research**

Around 2000, the state provided strong financial support for library and information service development. Under the promotion of government departments, several digital library construction projects were approved, including the NSTL project launched in 2000 and the CSDL project launched in 2001. These national projects greatly enhanced China’s scientific and technical literature guarantee capacity. As a participant in both NSTL and CSDL projects, Professor Meng was deeply involved in their preparation, design, organization, and management. In 2012, the Chinese Academy of Engineering launched the “China Knowledge Center for Engineering Sciences and Technology” (CKCEST), a big data project in China’s engineering technology field. Professor Meng served as an expert consultant and evaluation expert for the project, providing constructive suggestions on development strategy, construction goals, implementation plans, and sub-center monitoring and evaluation, assisting in advancing the project’s design, construction, and development.

While engaged in digital library construction and service practice, Professor Meng simultaneously advanced theoretical research on digital libraries, undertaking and completing multiple research projects on topics including digital library construction and development models, intellectual property rights and countermeasures, application standards for digital resource unique identifiers, and feasibility studies on networked reference consultation services.

Drawing on his extensive experience in digital library construction, management, and project research, Professor Meng published a series of academic articles on digital libraries. Employing various research methods, he analyzed and discussed multiple aspects of digital libraries, including electronic resource usage statistics, NSTL development strategy and planning, NSTL information portals in library and information science, real-time online reference services, international scientific citation database construction, NSTL joint data process-

ing system design and construction, digital resource unique identifiers, ontology methodology, network application standards, and folksonomy.

In his 2002 article “Several Thoughts on Developing China’s Digital Library Cause” [16], Professor Meng explicitly stated that digital libraries should at least possess these characteristics: massive storage of digital resources, cross-temporal and cross-spatial networked information access, intelligent search engines and user-friendly interfaces, user service models with e-commerce features, and organizational structures facilitating resource sharing. His exposition on digital library functional positioning provided systematic macro-level understanding for subsequent research on digital library technical architecture and other core issues.

Meanwhile, Professor Meng emphasized timely transmission of digital library research findings to students. He taught the course “Digital Library Theory and Practice” for doctoral students at the Chinese Academy of Sciences Documentation and Information Center. After retirement, he continued to be invited to deliver special lectures on digital libraries at Beijing Normal University and participated in training master’s and doctoral students from multiple institutions in key digital library research areas such as information retrieval, information analysis, and information visualization.

#### **4. Cultivating Advanced LIS Talents with Rigorous and Pragmatic Academic Style**

Exploring a scholar’s academic thought can be achieved by summarizing published research findings or by analyzing their words and deeds in the talent cultivation process. While engaging in library and information service practice and theoretical research, Professor Meng’s outstanding cultivation of advanced LIS professionals constitutes an important component of his contributions to the field. He supervised 27 graduate students, including 20 PhDs and 7 master’s students. His teaching style of teaching by precept and example, being a role model, and “moisturizing things silently” has influenced every student. Under his guidance, most students have grown into advanced talents in China’s LIS field, with many now teaching as professors, associate professors, doctoral supervisors, and master’s supervisors, cultivating third- or even fourth-generation students, embodying the inheritance of Professor Meng’s academic thought. Currently, the number of students across generations has reached hundreds, truly “peaches and plums filling the world.”

Through interviews with multiple PhD students supervised by Professor Meng and investigation of some students’ study diaries, his teaching style can be summarized in four aspects:

#### 4.1 Rigorous Scholarship and Meticulousness as Fundamental Principles

In guiding students' academic research, Professor Meng consistently adheres to rigorous scholarship and meticulousness as fundamental principles. He believes that "content must be scientific, and writing itself must also be scientific. The overall workload cannot be reduced, and there is no room for any 'luck' mentality." In teaching, he demands strict standards from students, requiring monthly progress reports to monitor their learning and research progress. He provides guidance on each issue reflected in students' reports and offers specific revision suggestions. For articles students intend to publish and doctoral dissertations, Professor Meng reads every word and sentence carefully, proposing profound and specific revision suggestions, and in many critical places, directly makes comprehensive revisions, enabling students to recognize their deficiencies and strive to improve through comparative learning.

From his guidance comments on some students' papers, his rigorous scholarship and deep concern for students are evident. In one email guiding dissertation writing, he pointed out: "Details determine success or failure. All details affect dissertation quality. The more thorough the revision, the higher the quality. I appreciate your decision not to go home for the Spring Festival. Last year, your classmate also stayed during the Spring Festival even after completing the first draft, and even then, time was very tight."

Professor Meng believes that a key aspect of rigorous scholarship is clearly defining key concepts and terminological relationships, ensuring logical consistency in expression. This is the basic starting point for standardized research. When guiding one doctoral dissertation, he required that "every important concept used in the article must have a clear and accurate definition, and readers must be clearly informed at appropriate places." In another guidance session on the same dissertation, he noted: "The proposal does not clearly explain 'what possible (or which) relationships may exist between science and technology,' which is a very important issue that should be described more clearly and explicitly." He repeatedly emphasized: "An important concept that needs to be introduced and followed now is 'convergence.' Focus main energy on clarifying the full-text relationship, and absolutely avoid inconsistencies or even contradictions in arguments between different sections."

For key evidence, Professor Meng emphasized mastering a sufficient scale of reliable data and materials, conducting multiple validations of data obtained through questionnaires or experimental observations to ensure adequate reliability and validity. In guiding one student, he mentioned: "I'm glad to see you have completed the survey and basically finished data analysis. These data are like ingredients for cooking; only with ingredients can you prepare a delicious meal." He required students to "identify detailed problems in existing methods from various aspects based on repeated experiments and literature research, and then further improve and perfect the method. This is the basic method

and requirement for conducting doctoral dissertation research.”

#### **4.2 Emphasizing Knowledge Accumulation and Seeking Truth from Facts**

Academic research is a process requiring continuous accumulation to focus on research questions and make discoveries. Therefore, Professor Meng requires students to extensively explore various materials, comprehensively collect, investigate, and organize various data to achieve seeking truth from facts, converge and focus research topics, find research breakthroughs, and achieve innovation. “It must originate from practice and surpass practice. The vision must be broad, with facts, comparisons, analysis, and new conclusions” is his incisive exposition on knowledge accumulation and seeking truth from facts.

When guiding one student, Professor Meng pointed out: “Only by possessing large amounts of sufficient materials can one form one’s own ideas and have a clear understanding of the research problem. During the literature review process, one continuously converges the theme and highlights what one wants to do. This learning experience is too profound. Unfortunately, some people now do not recognize this, or recognize it but do not act accordingly.” To another student, he emphasized: “You currently need to calm down, delve in, and reconceptualize the dissertation’s research content, methods, and ideas. Conceptualizing a dissertation is not just about having ideas, but conducting in-depth, detailed, and sufficient investigations and experiments to see if your ideas are feasible, achievable, and how feasible they are theoretically and practically.”

In comments to doctoral students, Professor Meng explicitly required: “We must vigorously enrich first-hand materials, not speak empty grand principles, but use facts to prove and elaborate your arguments. Also pay attention to enriching the situation abroad and research status at home and abroad to demonstrate the significance and role of your own research.” “I feel the core crux lies in insufficient learning and inadequate thinking. It is necessary to further read the latest articles, understand the latest domestic and international progress, connect with research reality, identify differences and deficiencies, and propose solutions through analysis. Naturally, the dissertation will have content, and ideas will gradually become clear.” “I hope you can start questionnaire research work as soon as possible after further revision. Attach great importance to the survey, with no fewer than 300 responses (one student said she collected over 2,000). Only then will the analysis be convincing. Meanwhile, pay attention to understanding the latest foreign situations, extensively collect relevant materials, and actively write the dissertation main text.” “The basic completion of questionnaire collection work indicates substantive research progress and entry into the next stage, which is commendable. Hope to further conduct targeted expert interviews to consciously compensate for weaknesses in questionnaire analysis.”

Listening to multiple perspectives leads to clarity. In academic research, “listen-

ing to multiple perspectives” means extensive accumulation and full possession of materials, data, and sources, enabling one to “clarify” research focal points and factually demonstrate research basis and innovation. Regarding focusing on key research issues, Professor Meng required: “We must pay attention to full-text consistency and coherence, ignoring or simplifying content not closely related to the article’s theme.” In communication with one PhD student, he mentioned: “The current content is well-written, but in the proposal PPT, you should simplify your content, grasp the main core issues, elaborate your research ideas, and never deviate from the theme.” When teaching dissertation writing experience, he always emphasized: “We must absolutely avoid analyzing all issues comprehensively. We must grasp the main contradiction, focus on core issues for in-depth analysis. With priorities and order, the doctoral dissertation will have more substance.”

### **4.3 Tireless Teaching Under the Premise of Teaching According to Aptitude**

The doctoral dissertation largely represents the best demonstration of a PhD recipient’s independent and innovative research level in a particular field. Regarding dissertation topic selection and writing, excellent dissertation supervisors must comprehensively consider students’ personality traits, knowledge backgrounds, interests, and career plans. When students encounter difficulties and setbacks, they should provide encouragement; when students perform excellently or make academic progress, they should promptly give recognition and praise; when students show research deviations, they should confront problems directly without sparing criticism, daring and being skilled at criticism. Truly achieving targeted teaching according to aptitude for different students, for the same student at different training stages, and for the same student in different research tasks. Professor Meng’s various practices in teaching are precisely commendable.

When students encounter research setbacks, Professor Meng always provides timely encouragement. When one PhD student couldn’t find research ideas, he advised: “Proceed steadily and consolidate at every step. Dissertation writing is a process of continuous thinking, writing, adjusting ideas, and revising. Although sometimes you can’t write a single word in a day, as long as you don’t give up and persist in thinking, there will be moments when you feel ‘a sudden glimpse of hope’ and moments when your thoughts flow like a fountain, which is truly enjoyable.” In subsequent correspondence with the student, he encouraged: “Things always have twists and turns, sometimes smooth, sometimes stuck. Hope you can overcome the current difficult period through unremitting efforts. I especially support the simultaneous conduct of writing and survey analysis, which sometimes plays a complementary role and can promote each other. Perhaps one day you will suddenly have inspiration and propose new solutions.”

Professor Meng also inspires students through personal example, expressing that

he is “the same” as students in facing arduous work or research pressure, and that this is normal. In a pre-Spring Festival reply to one PhD student, he mentioned: “Actually, I also have no Spring Festival to celebrate. Several important work tasks currently cannot be completed even if I work every day during the holiday.” He further shared: “By the way, reporting my situation: NSTL was on holiday from the 20th of last month to the 4th of this month. Except for two days (New Year’s Day and the seventh day), I have been busy with work and papers on all other days, hardly leaving my room.” These expressions enable students to feel that Professor Meng shares the same pressures, and they are not “alone.” Everyone in life constantly faces various pressures. The research pressure during the doctoral stage is just one type of pressure at a certain life stage. The experience of withstanding academic research pressure can strengthen one’s ability to resist any other pressure. As the saying goes, “The sword’s edge is sharpened through grinding; the plum blossom’s fragrance comes from bitter cold.” Tempering will and strengthening resilience are more valuable gains in ideological quality that PhD students obtain during their studies at the Chinese Academy of Sciences.

When students demonstrate excellent qualities or significant research progress, Professor Meng promptly gives appropriate affirmation, recognition, praise, and encouragement. “Your characteristic is the ability to continuously adjust research ideas according to progress and find appropriate solutions to problems. This is worth learning from other students” is his comment on one PhD student. “Congratulations on basically completing the survey work. Hope you can seriously analyze the results and correctly and completely apply the survey conclusions in your dissertation to elaborate or support relevant arguments.” He assigns follow-up research tasks while offering praise. When one PhD student completed the dissertation first draft, his praise was delightful: “Being able to continuously discover problems, solve problems, and improve yourself is a major advantage of yours, worth learning from everyone. After long-term unremitting efforts, you are finally about to complete the first draft, which excites me.” When affirming students’ phased progress, he said: “Congratulations on new academic progress and continuous improvement. Especially your practice of continuous reflection, refining research themes, and adjusting research direction and focus is worth learning from other students. Hope others can gain beneficial insights from your reports.” There are many similar commendatory and encouraging guidance comments, such as: “Your research ideas and plan are indeed much clearer than before and have made substantive progress. I agree with your idea of strengthening theoretical depth, enhancing analysis of statistical results, and finally theoretically summarizing some innovative viewpoints from the analysis.” “Wide-ranging interests, strong learning interest, high enthusiasm, and great drive reflect the vigor and enthusiasm of new students. Hope you can maintain this. Currently, you must seriously attend courses, complete relevant assignments, achieve good grades, and lay a solid foundation for further learning. Next, consider dissertation topic selection.” These words make students feel warmth and encouragement, greatly boosting their confidence for

subsequent research work.

When students show long-term research stagnation and slow dissertation writing progress, Professor Meng provides full encouragement: “Progress, however slow, is better than none. Don’t fear slowness, only fear standing still.” “Self-confidence is built and accumulated through doing. Starting quickly is the top priority. ‘No loss, no gain’ is absolute truth. You should learn to give up some things at appropriate times. I especially hope you can devote yourself fully to dissertation writing.” He also noted: “When you truly write, you realize many details were not considered beforehand, requiring constant adjustment, which wastes time. You are absolutely right that adjustment and revision are inevitable and necessary during writing. No one can expect their writing to be finalized in one go. This is why I always push you to hurry up and produce first drafts early.”

When facing students’ research deficiencies and deviations, Professor Meng often confronts problems directly, being blunt and unsparing, daring and skilled at criticism. Some respondents’ study diaries record: “I still suggest you calm down, look at good examples, and seriously think about how to write your doctoral dissertation. The way you are writing now basically does not meet the conditions for passing the defense. The more you write, the further you go, the more time and energy you waste. I still suggest you think clearly before acting, and be cautious.” “Objectively speaking, you do not possess strong academic research and dissertation writing abilities, which is also evident from the questionnaire design process. Therefore, you need to allocate more time than others to writing and revising your dissertation. So, if you want to graduate next year, you should cherish every day. Any slight slackness will threaten next year’s graduation. To gain something, you must lose something. Please think carefully and act cautiously.” “Job changes will inevitably affect dissertation progress. But I think the reflection you wrote below is the most valuable. You should think carefully about it, and it is also worth other students’ careful consideration.” “Now I feel that analysis is not difficult; the difficulty lies in determining what analyses to conduct, from which angles, and what data the dissertation needs. You must first clarify what to do before you can do it. Sometimes you feel overwhelmed and don’t know where to start. More thinking and comprehensive planning can achieve twice the result with half the effort. Otherwise, you will get half the result with twice the effort.”

#### **4.4 Practicing Academic Excellence Through the Spirit of “Character Refining”**

Text is one of the important means of expressing scientific discoveries and the primary way to make academic thought explicit. Concise, rigorous, fluent, and standardized written expression allows readers to feel the rigor of scientific discoveries, the subtlety of textual expression, and the pleasure of reading. Some articles mention that for non-advanced writers, their sensitivity to expression precision reaches only the sentence and phrase level, while for advanced writers,

their sensitivity extends to the character level. They must fully consider every character and character combination in semantics, grammar, and pragmatics before final application. “No article is written; it is revised! No matter how clever and capable, no one can produce a finalized draft in one writing. Always multiple revisions are needed.” This is Professor Meng’s basic requirement for “character refining.” When writing, “pay attention to article structure and accurate, rigorous, and concise textual expression” is a point he often mentions. In an email to a student, he pointed out: “You said you are exploring ‘the historical evolution of academic information exchange.’ This statement is incorrect. It should be ‘the historical evolution of academic information exchange modes and methods.’ Be careful not to deviate from the theme.”

When guiding students in professional writing, Professor Meng requires: “Everyone must be fully mentally prepared. After roughly completing the first draft, each of you must read the article through once or twice by yourself or ask family and friends to discover and correct logical errors in exposition and inappropriate word usage (especially adjectives). This is very important. Last year, one student asked several people to review her work. This is the so-called ‘character refining’ process, which is very beneficial for improving article quality. Another point is to remind everyone that during revision, you must be ‘willing to cut what you love.’ Content unrelated or loosely related to the dissertation theme or argument, no matter how brilliantly written, must be resolutely deleted. Otherwise, it will only have the side effect of gilding the lily.”

Regarding the effect of “character refining,” Professor Meng’s requirement for students is: “After resting for a few days, the core task is to re-examine and carefully read the dissertation from a reader’s perspective. Comprehensively revise, supplement, refine, and polish the full text—that is, do the so-called ‘character refining’ work. The entire text must flow smoothly, forming a consistent, coherent momentum, structure, and hierarchy from beginning to end. Every chapter, section, paragraph, sentence, phrase, and even every character must revolve around the central theme and central idea. This may sound like an excessively high requirement, but only by doing so can you write a good dissertation. Readers and advisors should want to read the next page after reading one page, and the next chapter after reading one chapter, finding it increasingly engaging and unable to stop. You have sufficient ability and strong perseverance, and there is still plenty of time. No need to be nervous, anxious, or upset. Steady and solid, step by step, we will definitely succeed!” These words fully reflect Professor Meng’s meticulous and rigorous academic style.

Professor Meng’s guidance and cultivation of students are painstaking and dedicated. In teaching methods, he always clarifies principles and moves people with emotion. His deep care for students is something they can all feel. His tireless learning and teaching spirit subtly influences and imparts to students, who all feel they have benefited immensely. Additionally, his strict self-discipline and lenient treatment of others in personal conduct are also admired and respected by students.

## 5. Sources and Drivers of Professor Meng's Academic Thought and Practice Innovation

“Don't look at anything only on the surface; analyzing problems must explore their internal causes.” This is a maxim Professor Meng often emphasizes when guiding students. Everything in the world has its underlying reasons and rationales. Seeing through phenomena to essence reveals more essential causes and elements for accomplishing something. Creating conditions when none exist, and having the courage to independently research and establish China's own citation database requires the researcher to have tremendous courage and boldness to undertake such responsibility.

How were Professor Meng's qualities of pursuing excellence, seeking truth from facts, and pioneering innovation shaped? The reasons can be analyzed from his growth experiences, personal preferences, ideological qualities, and practical abilities. They can be summarized in six aspects:

1. **Extremely broad knowledge base.** He loved science and technology from childhood, extensively read scientific and technological books and periodicals, and accumulated relatively broad scientific and cultural knowledge.
2. **Thinking methods of diligent reflection and good debate.** He likes to observe things deeply, is good at independent thinking, always asks “why” about everything around him, and explores the causes and effects of things' occurrence and development.
3. **Innovative consciousness of courageous exploration.** He is brave in taking new paths and exploring new problems, unwilling to stick to conventions and repeat old paths, whether in life, work, or research and student supervision.
4. **Practical spirit of diligent work.** He thinks diligently, enjoys practice, and likes to create things with his own hands. In his early years, he assembled televisions and radios and made dozens of items himself, developing strong hands-on consciousness and ability.
5. **Victory confidence in overcoming difficulties.** He enjoys labor, is willing to endure hardship, and his family education and military career shaped his courage to challenge difficulties, his determination to overcome them, his confidence in victory, and his self-reliance spirit of not fearing risks.
6. **Dialectical and objective analytical ability.** Possessing strong dialectical thinking and logical problem-analysis abilities, he can find solutions and approaches through in-depth analysis of relevant elements when encountering obstacles and difficulties.

Of course, psychological qualities such as staying calm when encountering problems, responding calmly, discerning right from wrong, and making correct decisions, as well as personal qualities including modesty, prudence, diligence, eagerness to learn, low-key conduct, and willingness to ask questions regard-

less of status, are also basic qualities internalized in Professor Meng through long-term academic research and practical exploration.

It can be said that “driving and enriching LIS academic research with practical innovation, and enriching and perfecting practical innovation with academic research” is a true portrayal of Professor Meng’s academic cultivation and pragmatic research and practice journey. Since graduating from graduate school in 1982, Professor Meng has been working at the Chinese Academy of Sciences Documentation and Information Center. With persistent pursuit of and loyal dedication to the LIS profession, he has devoted himself to LIS theoretical research, practical activities, and talent cultivation. Throughout his academic career, he has written continuously with deep affection for the library and information profession he loves, achieving fruitful results. He has produced admirable academic achievements in numerous fields including bibliometrics and citation database construction, literature and information service development, resource construction and scientific literature retrieval, and digital library theory and practice. In long-term LIS practice, he has remained true to his original aspiration and devoted himself wholeheartedly. In citation database construction, scientific literature database construction, and digital library construction projects such as NSTL, CSDL, and CKCEST, he has dared to be a pioneer and willingly served as a stepping stone for others. He has done his utmost to cultivate advanced talents for China’s LIS field, devoting all his efforts. The “character refining” spirit he advocates continues to inspire all his students and younger scholars to pursue excellence in academic inheritance and innovative development.

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**Huang Guobin:** Responsible for material collection, organization, analysis, and paper writing.

**Chu Jingli:** Topic determination, viewpoint refinement, and paper revision.

**Cui Ruiqin, Li Jing:** Paper writing and revision.

**Wei Lai, Li Rui, Zhou Qian, Fu Shaohong:** Participated in viewpoint refinement and paper revision.

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## Be Good at Thinking and Learning to Mashup Knowledge and Practice, Establishing Morality and Cultivating Talents to Build Pillars—Overview of Professor Meng Liansheng’s Academic Thought and Graduate Student Cultivation in Library and Information Science

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**Abstract:** [Purpose/Significance] By discussing Professor Meng Liansheng's academic thoughts and practical course, we can understand the development of library and information science in China to some extent, and provide experience and reference for future academic exploration and progress. [Method/Process] The article applied content analysis, bibliometrics, and interview methods to collect, sort out, and analyze various types of materials and data to form research conclusions. [Result/Conclusion] Professor Meng has the courage of academic exploration, pursues practical innovation, and has opened a precedent for the research and construction of Chinese citation databases. He has made great achievements in the essential relationship between scientific research and information science, the development of literature and information industry, the construction of scientific and technological information resources, the retrieval of scientific and technological literature information, and the theory and practice of digital libraries in China. His rigorous academic research, accumulation of knowledge, seeking truth from facts, and excellence in the spirit of "refining the characters" is admirable. And his teaching style of "moisturizing things silently" is admired by all his students.

**Keywords:** Meng Liansheng; Academic Thinking; Innovative Practice; Personnel Training

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

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