

Research on the Professional Qualities and Promotion Ways of Intelligent Librarians

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Abstract—Intelligent library is the inevitable demand of the development of the times and the direction of the development of modern libraries. It has the characteristics of interconnection and sharing, high efficiency and intensive, convenient use, intelligent management and other functions. With the support of Internet of Things and intelligent equipment, it promotes the wisdom of University libraries, so as to meet the actual needs of university readers and audiences for libraries. In this process, librarians of intelligent libraries should actively respond to the new requirements of work, and then accelerate the transformation of their roles to provide better services for readers and audiences. As one of the core elements of the intelligent library, the Librarians of the intelligent library need to possess the knowledge literacy and technical ability of the intelligent service. It mainly includes the knowledge of map and information, subject knowledge, current situation knowledge and other professional knowledge, as well as information retrieval ability, reference and consultation ability, analysis and prediction, and the professional spirit of continuous truth-seeking and innovation.

Index Terms—Intelligent Library Librarian; Professional Quality; Intelligent Library; Interconnection and Sharing; Intelligent Service.

I. INTRODUCTION

Wisdom Library refers to the combination of intelligent technology and library construction to form a digital, networked and intelligent library form [1-16]. Intelligent library is the product of the expansion and extension of the micro-level of intelligent earth. In short, intelligent library is a new mode of library development that combines library, Internet of Things, NFC, cloud computing, intelligent equipment, RFID and other things. Intelligent library is not limited by physical space. It is different from digital library. The foundation of digital library is the Internet, and its perception level is low. Intelligent library is a kind of library form that can be truly perceived.

In recent years, with the rapid development of cloud computing, big data, Internet of Things and other modern technologies, Intelligent Library as a comprehensive system engineering of many modern technologies has become the development direction of modern libraries. As one of the core elements of smart library, whether smart librarians (hereinafter referred to as smart librarians) have the knowledge literacy and technical ability of smart services, and

whether they can provide satisfactory services for users will greatly affect the level of Smart Library services. Therefore, it is of great significance to explore the professional qualities that intelligent librarians should possess.

II. BASIC FUNCTIONS AND CHARACTERISTICS OF INTELLIGENT LIBRARY

2.1 Basic Functions of Intelligent Library

Intelligent library is an advanced development form of library after the development of digital library to a certain extent. It is an organic combination and innovation of digital library, intelligent building and other new intelligent technologies, which is quite different from traditional library. It takes user service as the core, realizes inter-library data exchange and multi-terminal synchronization of resources through extensive interconnection among users, libraries and collection resources. Intelligent libraries are highly intellectualized in knowledge services. By analyzing the data of users' behavior, they can provide users with more convenient, fast and accurate one-stop service, realize the mutual communication between libraries, information and users, and link books, people and space into an information ecological organism.

The purpose and development direction of Smart Library is to break through the limitations of time, space and use mode of traditional library services, and provide users with ubiquitous, comprehensive services, efficient and convenient smart services. In essence, intelligent library is a new form of knowledge service. It is not only an information center, but also a service center. The main components of intelligent libraries include three-dimensional systematic literature resources system, intelligent knowledge service system, highly intelligent equipment and modern technology system. The three-dimensional systematic literature resources system is the resource base of the effective service of the intelligent library, and the modern intelligent information technology is the technological basis of the existence and development of the intelligent library.

2.2 Several Characteristics of Intelligent Library

(1) Interconnection and sharing. The ultimate goal of intelligent libraries is to interconnect all kinds of independent literature information with readers and managers through

Internet technology, to realize the intelligent connection between readers and management, front and back, and to realize knowledge sharing. This kind of interconnection is not only the interconnection of resources, technology, services and other aspects, but also the three-dimensional interconnection across different departments, different industries, different fields and different regions. The concrete manifestations are machine-machine interconnection, layer-by-layer interconnection, regional interconnection and so on. In this extensive three-dimensional interconnection mode, users can use a platform or a tool to explore, pursue, discover, store, transfer, share and even re-create resource information and knowledge. For example, users do not even need to find the address of the resources or enter keywords without knowing exactly what information they are looking for. They only need to describe the information they are looking for at the intelligent terminal. The intelligent library will push the required borrowed materials to the readers through the automatic borrowing system.

(2) Efficient and intensive. The construction of Smart Library advocates the concept of Library cooperation, the concept of integration cluster and the construction of information sharing platform. With the help of developed network interconnection technology, intelligent libraries integrate various decentralized elements in independent libraries into a whole with richer resources and stronger service capabilities, which can strengthen the effective connection of libraries, enhance the effectiveness of library management and construction, realize the collaborative sharing of library information resources and cluster management, and make readers in different regions unacceptable. Regional restrictions on the use of library literature resources and equipment resources. For example, the introduction of "one-card-in-one-city" and the emergence and development of the cluster alliance of network lectures and online exhibitions in recent years have broken through the division of geographical scope and administrative division, promoted the development of Library clusters, expanded the functions of library public cultural services in a wider geographical scope, and further improved various facilities, resources and documents of many independent libraries. Use efficiency of information, human resources, etc.

(3) Easy to use. Compared with traditional libraries, the service function of intelligent libraries will not only be more perfect, but also be able to use advanced information processing technology to integrate library information resources and provide readers with advanced information retrieval means. At the same time, the intelligent library manages and uses the library's cultural space, activity space, learning space, research space, multimedia space, system experience space, innovation space and knowledge space intelligently and individually through the IC space management system, so as to provide more accurate and real-time information service for users, and to analyze the basis of the records of the past use of information by reference

users. On the basis of this, it intelligently pushes information resources suitable for users to achieve the improvement of user experience effect.

(4) Intelligent management. Intelligent libraries use embedded intelligent devices to achieve intelligent control and efficient management of libraries. Intelligent library integrates all business systems into a platform, provides unified standard protocol interface for data upload, and actively obtains the use data of library management system, self-service system, access control system, IC space management system, electronic resources, etc. Then, using various intelligent technologies, such as knowledge mining, cloud computing, cloud storage, etc., to process complex data aggregation, analysis and calculation, and provide personalized information and services to specific users or groups.

III. ANALYSIS OF THE ROLE OF INTELLIGENT LIBRARIANS

3.1 The Important Role of Librarians in Intelligent Library

The development of library services from the initial dependence on resources, technology and tools to the increasing dependence on the wisdom of librarians fully reflects the development process of library services from the initial literature services to information services, and then to knowledge services. American librarians have investigated and analyzed the importance of various factors affecting library services. The results show that library buildings account for 5%, information materials account for 20%, and librarians account for 75%. This shows that librarians, as the dominant service model, play a vital role in the overall operation of the library. The service mode of intelligent library is based on the knowledge service of librarians' wisdom. It is a high-level service with quality, value and content. In intelligent library, as the core and main body of "intelligent service", intelligent librarians find out users' reading hobbies, tendencies and potential needs by analyzing users' reading data, educational background and work experience, and then adjust service modes and contents in time to better and more accurately meet users' personalized service needs. This way upgrades and remolds the traditional knowledge service model, and puts forward deeper and broader requirements for the professional quality of librarians. In a sense, the level of "wisdom" service of intelligent libraries depends mainly on the quality of intelligent librarians.

3.2 Role Orientation of Intelligent Librarians

With the change and development of the economic and social environment, readers have different needs for library services at different stages. To adapt to this change, library services are constantly developing and upgrading. In this process, the role of librarians has undergone several stages of transformation and upgrading:

(1) The librarian's main duty is to complete the traditional document lending service.

(2) Reference librarians mainly provide information consultation services.

(3) Subject librarians should complete knowledge push service.

(4) Intelligent librarians. The construction of intelligent libraries promotes the emergence of the role of "intelligent librarians" and the fourth transformation of Library services. Intelligent librarians are professionals who, on the basis of deep mastery of knowledge resources, assist users in knowledge mining from the perspective of experts so as to integrate knowledge effectively and provide users with intelligent knowledge value-added services. Intelligent libraries are different from digital libraries. Digital libraries focus on the changes of document storage and service modes. Intelligent libraries focus on more intelligently perceiving needs, providing services and managing information resources. From the technical point of view, the main task of digital librarians is to digitalize the paper resources of traditional libraries and realize the digitalization of resources in the network environment; intelligent librarians will intellectualize the library and use technical equipment to perceive the needs and characteristics of users, so as to provide more personalized services for users. From the aspect of librarians' quality, the digital demand of resources in digital libraries requires librarians to continue learning in order to promote their development. Intelligent libraries put forward higher requirements for librarians' quality, not only need to understand or skillfully use new technologies and equipment, but also need to help users realize knowledge discovery and acquisition, organization and integration, so as to have more personalized experience and more specialized knowledge. Value-added services, to achieve the integration of people and knowledge.

IV. PROFESSIONAL QUALITIES NECESSARY FOR INTELLIGENT LIBRARIANS

4.1 Subject knowledge literacy

Intelligent librarians are all-round librarians. Qualified intelligent librarians are bound to have strong professional quality and complete knowledge system as support.

(1) Knowledge of graphic information. Map knowledge is the most basic skill that librarians must possess. Intelligent librarians can only combine library resources with their own subject background to carry out expert services and subject librarian services if they have relevant knowledge of maps and information. Compared with subject librarians, intelligent librarians not only need to complete the services provided by subject librarians, but also need other high-level services, so they need more professional and profound knowledge of graphic information.

(2) Have knowledge of the subject. Subject service is a highly specialized service type in library service business, which requires intelligent librarians to have a certain depth of disciplinary background, have a solid basic knowledge of the subject, understand the relevant concepts, basic theories and

research methods of the subject, and pay attention to the development of the subject, research hotspots and frontier research results. Only in this way can we use our professional knowledge in the process of knowledge service, help users quickly and pertinently obtain the resources they want, and save the time of users' information acquisition. To a certain extent, a qualified intelligent librarian should have the potential of discipline research and become a literature research expert in one or several disciplines.

(3) Knowledge of current situation. In the era of big data and cloud storage, facing the high demand of interdisciplinary users, intelligent librarians need to insist on lifelong learning in a positive mental state. In addition to the necessary skills, they also need to have a broad vision of knowledge, not only to understand the latest national policies, but also to understand all kinds of latest information resources, so as to provide timely and effective information for users. Establish a good image.

4.2 Professional and technical literacy

(1) A number of professional technologies. The traditional core business of librarians includes reference, science and technology novelty search, information retrieval, etc. With the development of society and science and technology, in today's big data era, users' specialization, intellectualization, compounding and convenience of library information service are increasing day by day. Future libraries will break through the framework of traditional resources construction and form an all-weather, all-round and all-resource diversified information service system. Intelligent librarians should constantly enrich their knowledge structure, timely grasp the relevant technologies, equipment and software usage methods needed for their work, such as knowledge map technology, search aggregation technology, image recognition technology, knowledge catcher technology, etc., to enhance the ability of deep information processing and mining, and provide a pair-based information search, screening, analysis and summary. In-depth mining of information and knowledge and expert-based systematic knowledge services for user needs analysis.

(2) Comprehensive professional ability. The development of library's intelligent service demands more on librarians' core professional ability. In addition to mastering information retrieval ability, reference and consultation ability and scientific and technological novelty retrieval ability, librarians must have certain scientific research ability, user's information demand analysis ability, user's information behavior analysis ability, information resources publication and transmission ability, and learning new knowledge ability. Think tank building capacity, pioneering and innovative ability.

(3) Ability of information analysis and prediction. The ability of information analysis and prediction is the most important ability that intelligent librarians must possess. In the era of big data, the construction and service of intelligent libraries are closely related to the application and analysis of

big data. Intelligent librarians need to use semantic technology and clustering technology of big data analysis from a large amount of fragmentary information. Through data cleaning, data mining and de-falsification, the information provided can be logically organized and has reference value. This puts forward high requirements for librarians' professional software proficiency, new information technology mastery, information resources evaluation and identification, information resources storage and organization, information resources processing and processing, data analysis and processing capabilities, machine equipment output and analysis capabilities, etc. It requires intelligent librarians to master various information search skills, master various data analysis tools, statistical software use and so on. In addition, they should be able to predict and analyze the future through the results of the analysis.

4.3 Professional spirit accomplishment

(1) Professional spirit of serving users in an all-round way.

No matter what form the library develops to, its essence is to serve readers. The essence of library intelligent service is to establish a new information service system, open a fusion and interactive service mode, and provide users with all-round services with wisdom and affinity. In terms of service concept, we should set up the service concept of "user first, beyond knowledge and enlighten wisdom". In terms of service materials, we should adhere to the concept of "academic neutrality" and provide readers with diversified, multi-level, high-quality, multi-type and rapid literature and information services and knowledge services from different fields, levels and directions. In terms of service mode, we should actively open up, change static service to dynamic service, change closed service to open service, and change passive service to active service. As the builder of library information system and the navigator of users' information use, intelligent librarians should take service users as the guide, change traditional counter service as the active service, obtain information from various channels through smooth and good communication and communication with users, and use professional knowledge, experience and methods to organize, search, screen and analyze information. Use high value information resources and user needs to track and compare in real time, and put forward innovative ideas for users to formulate satisfactory service schemes.

(2) Continuous innovation and truth-seeking professionalism.

Although the construction of intelligent library is still in the exploratory stage, intelligent service must be a new mode of library service development. The role of librarians is to help users open their wisdom and create new knowledge with existing knowledge. Intelligent service has a great impact on the traditional library service in service mode, service means, service concept. In the information age of the rapid development of the Internet, knowledge fragmentation and people's reading behavior fragmentation, librarians can only promote the timeliness, convenience and accuracy of service

for users by innovating service modes, combining with the network, and simultaneously providing various services for users online and offline. Librarians should satisfy users' individualized value pursuit with personalized information service, create "tailor-made" knowledge service environment for specific users, book information and services, establish personal knowledge system service center for users, and provide precise services for users according to users' reading habits, knowledge structure, information needs, behavior patterns and psychological tendencies, lifestyles, etc. It fully embodies humanistic care.

V. WAYS TO IMPROVE THE PROFESSIONAL QUALITY OF INTELLIGENT LIBRARIANS

5.1 Establish the concept of Vocational learning, establish regular training system, and constantly improve the professional knowledge and ability of intelligent Librarians

Intelligent libraries require higher ability of librarians. Intelligent librarians need knowledge and ability of professional knowledge, information ability, interpersonal communication ability and professional ethics literacy to better serve readers and audiences. Especially in the University intelligent library, in addition to the above capabilities and knowledge, librarians also need to have certain professional knowledge of the university, which can effectively enhance the recognition of teachers and students to the University library. Therefore, colleges and universities should strengthen the cultivation of professional quality of intelligent librarians, adopt short-term training and long-term education mode. Short-term training is to improve librarians' information processing ability and interpersonal communication ability through short-term training, and to explore the subject knowledge of various specialties in Colleges and universities, so as to improve the professional ability of intelligent librarians. Long-term education is to build a targeted education system for librarians according to their actual ability level, including knowledge of library management and professional ethics, which not only improves the comprehensive management and service level of librarians, but also benefits the personal growth of intelligent Librarians in Colleges and universities.

5.2 Fully Understanding Intelligent Information Equipment of Intelligent Library

Intelligent libraries are based on modern information technology and intelligent equipment. Modern information technology and intelligent equipment provide technical and hardware support for intelligent libraries. In order to improve the working level of intelligent librarians, it is necessary to grasp the corresponding technology and equipment use methods. Especially cloud computing technology, virtual reality technology, induction technology, etc. [4], its equipment includes intelligent induction equipment, RFID related equipment, intelligent equipment and so on. In addition, with the development of Internet of Things technology, the theory of intelligent earth based on Internet of

Things has been put forward, which has attracted the attention of many people in the information industry. At present, university intelligent libraries can also adopt Internet of Things as the development direction of intellectualization and informatization, thus extending and expanding the University intelligent libraries based on Internet, and putting readers and users in the audience. Experience is an important direction of change. Therefore, only on the basis of mastering the above-mentioned technology and equipment use methods, can intelligent librarians provide better service for teachers, students and readers in Colleges and universities.

5.3 Intelligent Library's Innovative Service Consciousness

Traditional librarians are more inclined to the management of books, and their service functions are relatively low. In the theory of Intelligent Library construction, more attention is paid to the experience and needs of readers, so the requirements of Intelligent Library for service are higher. Therefore, wisdom librarians should establish a correct sense of innovative service, through self-learning and self-improvement to increase new knowledge, master new abilities, understand new ideas, and clarify new directions, so as to provide readers with more diversified and deep-seated services. Taking subject knowledge as an example, there are many types of specialties in Colleges and universities. When students come to wisdom libraries, they need to choose themselves more appropriately. At this time, intelligent librarians should strengthen communication and communication with them, understand the actual needs of students, and recommend more suitable books according to their understanding of the subject.

5.4 Adhering to the Humanistic Service Concept of Intelligent Library

The concept of humanistic service has always been one of the essential concepts of Library managers. In the management of intelligent libraries, librarians should have a deep understanding of the actual needs of different groups of teachers and students for books and books borrowing, and apply the concept of humanism to carry out all kinds of work. Intelligent librarians are guided by the problems of readers and focus on solving the practical problems arising in the process of book borrowing for the audience. Question. In practical work, librarians can use instant messaging software such as Weixin, QQ and Weibo to communicate and communicate with audiences on the internet, so as to provide humanized book services for audiences.

5.5 Establishing Competition and Incentive Mechanism

Without competition and incentive mechanism, there will be no vitality and no motivation. Similarly, smart libraries need competition and incentives. Intelligent libraries have higher requirements for librarians' literacy than traditional libraries. The continuous improvement of librarians' literacy requires not only librarians' own learning and library training, but also certain competition and incentive mechanism. In smart libraries, librarians also need to be assessed. Reward excellent librarians and punish backward librarians. In this

way, the intelligent library can continue to develop. The quality of librarians can be continuously improved.

5.6 Strengthen the Ability of Exploitation and Innovation

Innovation is the soul of a nation and the inexhaustible motive force for the prosperity of a country. Similarly, as a cultural industry, libraries should continue to develop and innovate [4]. In the evaluation index of the ability of intelligent librarians, the innovation ability occupies the largest proportion in the self-development ability module, reaching more than 40 percent. Therefore, librarians should constantly learn and innovate on the basis of mastering traditional business.

Traditional librarians will be eliminated by intelligent libraries if they do not study or use them. Therefore, librarians should have a certain sense of crisis, actively learn new knowledge, new methods and new technologies, improve their competitive advantages, and cooperate with the system equipment to provide high-quality services for users [5]. How to develop the innovative ability of librarians can be taken as a breakthrough in the following three aspects: first, whether they want to innovate ideologically, secondly, dare to innovate in action, and finally, whether they can innovate in the overall environment. The so-called innovation is to change "nothing" to "yes", which faces not only the joy of innovation success but also the risk of failure, so we should have the desire to innovate and the courage to innovate. In addition, the external environment and personal abilities are also crucial. Innovation should be supported by the external environment. At the same time, for people, rich knowledge and broad vision are the basis of innovation. If we do not pay attention to strengthening learning, it will be difficult to acquire new knowledge, form new ideas, understand new things, solve new problems, let alone create new things and realize new development.

VI. CONCLUSION

University librarians should be conscious of the new requirements of intelligent libraries, change their roles as soon as possible, so as to complete their own work positioning and better serve the teachers and students in Colleges and universities. Under the background of the wisdom earth, the wisdom library is the inevitable trend of the current library development. Colleges and universities should attach importance to the construction of the wisdom library, guide the librarians to change to the wisdom librarians, improve the librarians' working ability through training and education, so that they can adapt to the change of their roles and contribute to the construction of a perfect wisdom library.

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