

# Graduate education of library science in China: Current status and recommendations for improvement

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**Abstract** More than twenty years ago, Wuhan University and Nanjing University offered library science (LS) graduate programs. Since then, LS graduate education has been growing quickly in many aspects. At the same time, however, LS graduate education was also facing enormous challenges stemming from the dynamic development and wide applications of information technologies into the pedagogical arena of teaching and learning at all levels. Social evolution also made it necessary for LS educators to re-examine once again their graduate education model, curricular composition, educational philosophy and educational missions. In analyzing the present situation of LS graduate education in China, this paper focuses on the following issues: 1) Growing size of LS graduate education (quantity and quality); 2) educational objectives, including research direction and placement for graduates; 3) structure of knowledge and curricular construction; 4) conditions of administering a library school of high quality and 5) the management of teaching resources. The keystone of this paper is to pinpoint where current library science curricular deficiencies are lying. It is hoped that more serious scholarly discussions and perhaps also even concerted efforts among LS scholars and library practitioners may be evoked in having the graduate education system of library and information science thoroughly realigned for the informational needs of the 21<sup>st</sup> century.

**Keywords** Library science, Graduate education, Educational objectives, Administration of graduate library school, Teaching resources for library science

## 1 Status of graduate education of library science in China

It has been more than twenty years since Wuhan University and Nanjing University started offering library science graduate programs in 1978 in China. During this period, LS graduate education has been growing quickly in size of student enrollment

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and in raised academic standards. By the end of 2003, there were only 21 LS Master programs in China<sup>[1]</sup>. By the time when the National Degree Conferring Committee approved the 10<sup>th</sup> Master's and Doctor's degree-granting institutions, there were 39 LS Master degree-granting institutions established in China. In 2007, the Master degree-granting institutions have reached an even higher figure of 42. Table 1 shows the development of library science Master degree-granting institutions in China.

At the same time, however, LS graduate education is facing unprecedented challenges stemming from the dynamic development and wide applications of information technologies into the pedagogical arena of teaching and learning. Social evolution such as the emergence and rapid development of such societal segments as e-government, e-commerce, e-libraries, e-resources etc. necessitated LS graduate educators to re-examine their education model, curriculum, education goals and the education mission. Beginning with an analysis of the present situation of LS graduate education, the authors proceed with a few suggestions pertinent to the healthy and stable development of LS graduate education in China.

On the whole, Chinese LS graduate education has developed its own meritorious features and characteristics. Firstly, the quantity and quality of Chinese LS graduate education have achieved a certain level of satisfaction. For example, there are 39 authorized library science Master degree-granting institutions and more than half of these institutions are permitted to enroll more than 10 students annually. Secondly, after a relatively short period of development, the number of research papers and projects conducted by Chinese LS graduate institutions are constantly on the rise and with a good track record. It is comparable to those of international standards. Take Wuhan University as an example, knowledge organization, and intellectual property management and information consultation have all been included in the research directions of their LS graduate programs. Thirdly, Chinese LS graduate education though shows somewhat a slower rate of growth as compared to the erratic development of some other countries, such as the United States, it is nevertheless on a balanced and steady course of development. The number of authorized library science Master degree-granting institutions and the students in such institutions during the past decade are steadily on the rise.

## 2 Size of LS graduate education in China

The size of student enrollment is one of the basic factors for discussing the academic standards of a certain educational program in a disciplinary area. When we talk about the size of LS graduate education, it means the number of institutions that offer LS graduate degree program and the students that can be enrolled in such programs, the geographical distribution of such similar institutions and the quality issues regarding to LS graduate education.

In 2000, there were only 18 authorized library science Master degree-granting institutions in China<sup>[2]</sup>. Six years later, this number rose to 39. At the same time, the number of student enrollment in these schools also increased steadily. Based on the investigation of 13 authorized library science Master degree-granting institutions



Table 1 The development of library science Master degree-granting institutions in China

Types of Master degree-granting institutions	Establishment time					
	1981	1984–1986	1990–1998	2000–2002	2003	2006–2007
Run by library schools	Wuhan Univ. (To grant Doctoral degree since 1993)	Nanjing Univ. (To grant Doctoral degree since 2003)	Zhongshan Univ. (To grant Doctoral degree since 2006)	Renmin Univ. of China (To grant Doctoral degree since 2006)	Liaoning Normal Univ.	Tianjin Normal Univ.
	Peking Univ. (To grant Doctoral degree since 1990)	Nankai Univ. (To grant Doctoral degree since 2003)	Nanjing Politics College, Shanghai Campus (To grant Doctoral degree since 2003)	Jilin Univ. (To grant Doctoral degree since 2006)	Fujian Normal Univ.	Anhui Univ.
	–	East China Normal Univ.	Northeast Normal Univ.	Beijing Normal Univ.	Heilongjiang Univ.	Qufu Normal Univ.
	–	–	Sichuan Univ.	South China Normal Univ.	Nanjing Agriculture Univ.	Huazhong Normal Univ.
	–	–	Shanxi Univ. Xiangtan Univ.	Hebei Univ.	Shandong Univ. Northwest Univ.	Central South Univ. Guangxi Univ. for Nationalities
	–	–	Zhengzhou Univ.	–	Yunnan Univ.	Southwest Univ. Xidian Univ.
	–	–	–	–	–	Xi'an Jiaotong Univ. Shanghai Univ. Zhejiang Univ.
Run by libraries and other institutions	–	NSL, CAS (To grant Doctoral degree since 1993)	–	The 4th Military Med. Univ. Library	Institute of Science and Technology Information Fudan Univ. Library	Henan Univ. of Science and Technology Technology Library Shanghai Jiaotong Univ. Library
	–	–	–	–	Tianjin Polytechnic Univ. Library	–
	–	–	–	–	Southeast Univ. Library	–



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in China, the number of graduate student enrollment in 2000 was 60, while it became 74 in 2001. In 2002, this number increased to 110<sup>[1]</sup>. Except newly authorized degree-granting institutions, nearly half of the authorized library science Master degree-granting institutions admitted more than 20 graduate students in 2006 (Table 2).

Table 2 The size of authorized LS Master programs and student enrollment in China

Year	Authorized LS Master programs	Student enrollment <sup>a</sup>
2000	18	60
2001	18	74
2002	18	110
2006	39	≥ 20 for each individual degree-granting institution

a. This number is based on the investigation of 13 authorized LS Master degree-granting institutions in China.

The number of those graduate students who are accepted each year by LS and IS institutions was 115 on average from 1978 to 1998. Comparatively, the number of the students accepted by LS only was 274 in 2006. According to our survey of 30 institutions with LS Master programs, there were 1,291 Master program students who enrolled from 2002 to 2006. This number represented an increase of student enrollment from 178 to 338 within that 4 years and the total rate of growth during that period was 89.9% with an average annual growth rate of 22.5%<sup>[3]</sup>. Those numbers indicate that LS graduate education was recognized by the society in general as of great importance in terms of career choice and has become even more so with the coming of the information age.

However, there exists great unbalance in the regional distribution of LS graduate education. The number of authorized library science Master degree-granting institutions in northern China is much more numerous than those in northwest China.

On the basis of the above-mentioned data, this paper argues that whether from quantitative aspect or from qualitative viewpoint, the magnitude of LS graduate education has achieved a high level of growth.

The rising importance of those schools in management and in information science also pushed the graduate LS education to a higher plateau in the landscape of higher education. Meanwhile, the Master degree programs of LS graduate education have not been given sufficient attention by LS scholars as it deserves. LS graduate education is still at a low level of development, especially in northwest China.

The fact speaks all. In order to eliminate problems mentioned before, we should take measures to keep stable growth of the authorized secondary disciplinary degree-granting institutions and also at the same time to increase the number of the authorized first-tier disciplinary degree-granting institutions. It is paramount that such LS educational programs in northwest China should be given more focused attention to their assigned educational roles and a much greater financial support so as to enhance the competitiveness of their professional undertakings and engagements.



Compared to foreign LS graduate education, we realize that our increment in size of LS graduate education is often inadvertently at the expense of a quality assurance. Except newly authorized Master degree-granting institutions, there are only 6 LS authorized Master degree-granting institutions that could be regarded as independent LS or IS schools. With such a meager presence of educational structure, we have to face the problems stemming from a quick educational advancement only in quantitative terms. We ought to control the one-sided quantitative growth of LS graduate educational programs by adopting the following measures. The first and foremost measure is to merge LS Schools and archival science schools together into one single educational entity so as to strengthen the educational resources by combining that of both institutions. The second is to raise the academic qualifications and job performing standards of the teaching team. These are the crucial element for the assurance of a quality education. However, this is easy said than done as there is currently a gross shortage of talented teachers in almost all LS Schools due to a multitude of reasons including not in the least, an administrative one. The third is to adjust to needs of the society. Although we are making new changes in pedagogical directions based on advanced information technologies, knowledge-based skills and network, the teaching materials and educational delivery styles nevertheless still lag behind. The last but not the least is to improve the educational delivery technique and opportunities. The faculty members and supervisors should provide students with more frequent academic consulting and practical training opportunities within their academic communities.

It is true that our library science is in a period of prosperous development. However, compared to other mature disciplines, LS is still in its formative stage of development. When we map out our strategy of development in the future, we are repeatedly facing a dilemma about how to strike a balance between quality and quantity due to the scarcity of our educational resources. On the one hand, we should maintain the stability of the existing size of LS education; on the other hand, we believe that the current administrative structure of the authorized degree-granting institutions should be realigned and their academic standards should be raised so as to meet the changing needs of our society in the information age.

### 3 The target of students enrollment at LS graduate schools in China

The size of student enrollment at LS graduate schools is more or less predicated by the job market situation. Based on the latest survey data, there are many kinds of jobs for LS graduates to choose from such as working at private firms, at public institutions or at government agencies. These graduates are benefited in their career pursuit by a basically sound curriculum provided by their LS graduate education.

Before mid-1980's, the goal of LS education was considered as a "special education". The curriculum of LS was then constructed to include both the required LS subject contents as well as the electives outside the discipline. In the late 1980's, a slogan was put forward by LS educators, "breaking out the subject specialty



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confinement, crossing the line of disciplinary differences”, which advocated integrating the curricula of library science, information science and archive science. Many curricular changes also took place at the undergraduate level at this time, such as the required courses for the LS major are to be taken in their first two years of schooling and a few selected courses outside of LS field are to be taken in their last two years before graduation. Under this kind of educational model, it was hoped that graduates could find jobs in different trades. Different from “discipline-specific education”, we call this model “liberal education”. After 1990’s, the issue of quality education attracted more attention of LS educators which emphasized integrating the LS educational program with that of management science, computer science and other humanities in order to make graduates more adaptive to the changing environment.

These changes in LS education compelled us to reflect once again about what kind of students we really prefer to have and for what justifiable purposes. Let us take a look at the first two groups of data about the employment situation of LS graduates. According to a survey conducted by Zhongshan University in 2003, there were less than 40% graduates finding jobs in libraries in which Master degree graduates counted about 15.7%<sup>[4]</sup>. In contrast, a survey conducted by *Library Journal* in 2003 indicated that there were 90.38% Master degree holders of LS in US choose to work in libraries<sup>[5]</sup>. In 2006, another survey of the Master degree students who graduated after 2000 showed that there were 25.5% graduates who had chosen other types of jobs rather than working at libraries<sup>[3]</sup>. From Table 3 we found that in Nankai University, the number of Master program graduates who prefer to establish a career in librarianship has increased only very slowly.

Table 3 The career choice of LS Master graduates in Nankai University during the period of 2004–2007

Year	Library area		Non-library area			
	Academic library	Other types of library	Publishing sectors	Government sectors	Enterprise sectors	Pursuing Doctor degree
2004	3	0	2	0	1	0
2005	0	2	2	1	1	0
2006 (Grade03)	3	0	1	1	1	2
2006 (Grade04)	4	0	0	0	3	1
2007	4	0	0	0	4	0

According to a survey conducted by Liu Wenyun in 2006, there were 31 institutions granted Master degree in library science in 2005, of which, their research directions included the following areas: 1) Information resource management (ranked the most popular one), 2) the study of the digital libraries (ranked the second), 3) the basic theory of library science (ranked the third), 4) the theory of the information and communication (ranked the fourth), and others (library resources development, cataloging, library automation, library management, scholarly communication and



publishing) in descending order 5<sup>[6]</sup>. Nevertheless, the research directions of these institutions were quite varied and diversified since the academic interest and the academic strength of their researchers in these institutions were also quite varied.

From the above survey, the reason, why there is such a gap between the actual obtaining of a suitable employment and the career aspirations of LS graduates in China is becoming clearer. The aim of most of the LS graduates in USA is to seek for professional jobs at any kind of libraries or information centers, which is line with their academic preparations. In this regard, the career objectives of the LS graduates in China is relatively ambiguous and far from settled.

There have been some research works done on the educational issues of LS for graduate students. Prof. Peng Feizhang's opinion is that the education for graduate students in library science should follow the practical needs of the society, and the graduate students should be trained equal to their professional work that they are expected to assume<sup>[7]</sup>. It is commonly acknowledged that there are two areas of training that goes hand in hand in the field of library science: One is the vocational part of their education, and the other is a more broad education to nurture information professionals with broader vision and theoretical knowledge to play a leading role in structuring current and future information services at libraries and information centers. This kind of educational programs has taken the changing modes of information demands of the society fully into consideration. A sound educational program to train LS graduates should include at least some of the following characteristics:

- Meeting the information needs of the society. This includes using applicable cutting-edge information technologies to manage information resources not only just for the benefits of library and information centers, but also for those of government agencies, commercial enterprises, professional organizations, medical and health-care institutions, etc.
- Meet the changing modes of public information demands in certain pre-selected disciplinary areas for in-depth training of their students.
- The unique and distinctive characteristic development of individual institutions. Individual institutions also need to develop their characteristics for the educational programs such as some outstanding features of their curriculum, their pedagogies, their faculty and their library resources based on their institutional history and founding missions.
- An insisted close and organic linkage between the aim(s) of their education program and their research directions. It need be insisted that educational program aims should be closely connected with the research directions of the LS institutions. Nowadays, the aim of education program in our country tends to be neglected or its mission statement is too vague to be carried out in a realistic way under a program of periodical institutional reviews. In the research direction area, it is recommended that more encouragement should be given to research work on practical issues or applied approach to certain new subject fields such as knowledge management or the organizational reengineering of the library



under the impact of the rapid development and the deployment of applicable information technologies into the library operation.

#### 4 Curriculum design of LS graduate education in China

The educational philosophy of graduate library science education program as reflected in its curriculum highlights its being changed from theretofore a knowledge foremost program to an ability foremost one; from a subject-specific field of study to a multi-disciplinary approach to practical issues.

Now in our country, this kind of curricular reforms is yet to be carried forward in any meaningful way. Many teachers in fact “only change the course names but not the contents of their course offerings.” The process of curricular construction is a big problem in all library science education programs. This was reported by Wang Zizhou and other people<sup>[8]</sup>. On the contrary, in America, the curricular content of the graduate educational program is closely connected with their social needs. Because of the complicated networking environment in the field of library and information services after graduation, they have to manage the vast information resources both external to and within their own library. They need to adapt themselves quickly to the new information technologies and to the proficient use of the new information technologies for their professional undertakings such as providing library services and library instruction to library users. Therefore, the curricula at graduate library schools are constantly under review for possible additions of new courses in order to insure the relevance, quality, and competitiveness of their educational programs. For instance, a recently revamped curriculum may include such technology-centered courses as portable computers, LAN, WAN and national network infrastructure, integrated library automation system, on-line information consulting and retrieval, CD-ROM database, interactive audiovisual system and so on. These curricular reforms share a few common characteristics, such as rich in technological subject contents, in emphasizing the study of users’ information retrieval behavior, social factors that affecting library operation, and the values placed on applied research. In some departments, the traditional cataloging and classification courses are being merged to become the information storage and retrieval courses, the reference consultation course is being replaced by the reference and information packaging course, library management is being substituted by general management and management strategy and so on. It is obvious that the curriculum at graduate library schools in America is constantly under scrutiny and periodical reviews for their possible improvement in a very competitive environment. Courses such as marketing library & information services, medical information sources, and user services & technology development practicum, etc. are some of the newer additions to the graduate library science curriculum, which are aimed to reflect new social needs and value shifting in a library and information service environment<sup>[9]</sup>.

The setting up of a viable curriculum is often decided by two factors. On the one hand, the research direction of the graduate library science program decides the





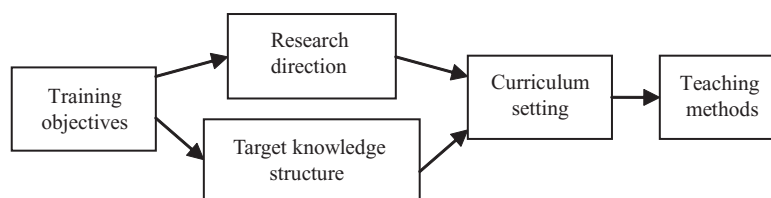


Fig. 1 The connection of educational objectives, research directions, base of students' knowledge structure and curricular construction of the graduate students' education in Library Science.

core curriculum content. On the other hand, the students' own knowledge base predicates the curricular formation. These two factors are major forces to shape up the educational objectives of a particular graduate library schools in China. Fig. 1 can clearly present the connections of these factors. The training objectives decide the research direction and the student's base of knowledge formation. The research direction and students' knowledge base are the two basic elements taken into consideration for a viable curricular construction.

The LS graduate student's education ideally should be an integrated multi-disciplinary knowledge structure, in which the study of various related subjects of library science constitutes the core. This kind of knowledge structure lays an emphasis on the required core courses and practical skill training of library science. It includes but not limited to computer-assisted learning and online information services. Other disciplinary fields such as knowledge management, sociology and psychology, etc. may form the electives depending on their relevancy to students' interest and career objectives.

## 5 Educational resources of LS graduate education in China

The administrative aspects of graduate library schools usually involve three dimensions, namely, the academic strength of faculty (faculty's quantity and quality), the administrative status of the educating unit (whether it is an independent operation from other teaching units), and teacher's role and status in the decision-making process of their affiliated educating unit.

According to the research findings of Prof. Chen Chuanfu and other people, in the area of age distributions of LS teachers at educational institutions in China, teachers younger than 40 years old account for 37.1%, 40–54 for 32.56%, 55–64 for 25.58%, older than 65 (including 65) for 4.65%. In comparison with American graduate library schools, there is a lack of young and middle-aged teachers in our country. Furthermore, most of the teachers in Chinese graduate library schools are Bachelor and Master's degree holders, doctorates are much fewer in number. On the contrary, teachers with doctoral degrees account for 80% in America graduate library schools<sup>[7]</sup>. With the constant widening of the training objectives, library graduate students are also trained to enter into the library careers of special libraries, such as those affiliated



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with agriculture, forestry, military and other professional sectors. These trends require the teachers to possess a sufficient multidisciplinary background to enhance their subject contents as well as to diversify their course offerings. In China, teachers with such caliber are short and far in between.

The autonomy of an academic department is one of the most important factors in insuring its healthy growth and development. In the existing 39 authorized Master degree-granting institutions, 13 LS institutions are under the aegis of management school, one LS institution belongs to school of information and technology, 7 LS institutions belong to library (or center of science and information), the rest remains with schools of information management, which accounts half of all departments of library and information science in China. Obviously, there are some distinctive advantages if the department of library and information science is affiliated to a school of economics and management which usually have relatively ample educational resources. It can help LS departments improve their academic prestige in social and professional circles. It can enlarge their external connections for the sake of obtaining more teaching resources. However, as a subordinative teaching unit of the university, the LS teachers usually have limited domination about their own operating domain such as staffing, teaching methods, research directions, educational programs, etc. Inevitably, this situation is restrictive to their department's healthy growth and a sustained development of professional competitiveness.

Two Chinese degree-granting graduate program of library science are worthy of special mentioning for their pioneering work in this particular academic field. National Science Library of the Chinese Academy of Sciences (the former Library of the Chinese Academy of Sciences) was authorized to grant Master degrees for library science in 1986 and Doctoral degrees in 1993. It was also authorized to grant doctoral degrees of information science in association with Nanjing University in 1995. Another institute, Chinese Science and Technology Information Institute had been previously authorized as a Master degree-granting institution of Information Science in 1978, was subsequently also authorized as a Doctoral degree for information science granting institution in association with Peking University in 1998. It was authorized to grant Master degrees of library science in 2003. Those two institutions are pioneers and giants in graduate library science education in Chinese Library and information education centers.

Recently, there are some heated debates in library circles about the issues that involve libraries or information centers as LS Master degree-granting institutions. The increase of the number of LS Master degree-granting libraries or information centers denotes the improved status and strength of library schools and information centers within university settings. The characteristics of the graduate library and information science programs run by libraries or information centers are:

- The number of such institutions increased in large numbers after the year of 2000;
- Academic libraries as degree-granting institutions shared a large percentage of the annual production of library graduates among Chinese institutions of higher learning;



- The educational delivery method for the matriculated students to take all their courses either at a major library with their professional librarians to administer their study or at a teaching institution affiliated with a major library; and
- The research orientation of these educational programs are on the practical side, such as information technologies and library operation, digital resources management, digital libraries, etc, which are closely connected with day-to-day library work.

According to the above analysis, we would like to put forward several recommendations:

- Firstly, the quality issue of the faculty is the main concern for a quality educational program of library science. It includes the vigorous recruitment of the younger and more capable professionals into the work force, setting up a higher academic degree requirement and insisting the new recruits of a track record of good teaching and research background. Faculty members who have doctorates are no sure guarantees for having developed a quality educational program. The key solution lies in the nurturing perceptive visions and engaging in innovations by the faculty and administrators alike within a purposeful context of library science education.
- Secondly, the study of library and information science should join with the study of archive science for the reasons of covering adequately their overlapping work perimeters, elevating their professional image, enhancing their professional competitiveness as well as for the strengthening of their fiscal resources.
- The third recommendation is to develop a sound guideline/practice for the accrediting agencies for library and information science educational programs to do their job more professionally. The issue of academic standards has to be addressed quickly. Due to the expansion of some libraries and information centers as Master degree-granting institutions, several qualitative issues have surfaced as a consequence. The first is how to control the total number of students each year to be admitted to graduate library schools in order to assure a quality education and a good placement record after graduation. Many provincial academic degree committees, who are authorized to examine/accredit the Master degree-granting institutions, often group library science education together with other disciplines. Most likely the LS degree-granting institutions are examined by off-site judging panel or experts in other disciplines. Most of the experts are not familiar with library science education and field practice so much so that they tend to use accreditation standards for other disciplines the same way to evaluate library science educational programs, which often resulted in consternations instead of achieving originally intended purposes. Therefore, the setting up of a national standard for the evaluation and accreditation of LS Master degree-granting institutions is an urgent educational agenda recommended by various provincial academic degree committees. Our suggest is to establish an objective list of criteria for granting faculty members different grade of



academic ranks and for advancement in academic ranks at degree-granting institutions of library and information science. That means such faculty accomplishments as innovative curricular design, teaching effectiveness and productivity and quality of academic research achievements should all be factored into such evaluation consideration.

- The fourth one is to make a differentiation between those Master degree-granting programs administered by libraries and those by colleges and universities. Those administered by colleges and universities should focus on a curriculum consisting of systematic knowledge and related theories. As to those run by libraries or information centers, they should take full advantage of their being situated in a real workplace to focus on the development of a combined curriculum with an emphasis in theoretical studies as well as on practical practice. The research orientation for the latter should be compact and applied in nature.

## 6 Conclusions and outlook

Library science education has recently emerged to be one of the hot topics in scholarly research and communications. The academic discussions are usually centered on issues involving how to improve educational quality, how to keep pace with the changing needs of social development as well as on the curricular constructions, etc. In short, a call for a large-scale of comprehensive educational reforms in library science is looming on the horizon.

It can be reasonably argued that the adjustment and improvement of Chinese LS graduate educational programs still have a long way to go to reach its desired destination. This paper just gives a few salient discussions and recommendations, which can be briefly summarized into the following three problem-solving perspectives, namely, 1) The growing size of LS graduate educational program; 2) the changing educational objectives and social reality; and 3) a critical review of curriculum design and teaching resources. In our opinion, it would require an unprecedentedly sustained and concerted effort by leaders in the LS field to make the desired progress for the graduate LS education in China. This less than optimistic assessment is due to the fact that there are in existence of some inherent institutional barriers. Also much more scholarly research work in this subject field area needs to be carried out and for which more funding is necessary. Besides, the philosophy and objectives of LS in general should subject to a process of periodical review for possible changes and revisions in order to make it more responsive to the changing information needs of this emerging information-oriented society of ours.

No matter how wise and correct our approaches maybe in resolving some of the most difficult problems about library science education in China today, concentrated and relentless efforts on the part of Chinese LS leadership are indispensable in this regard and professional undertaking. It is also advisable for them to establish an appropriate mechanism and with an urgent agenda and timetable to work on those needed educational reforms. Moreover, we suggest that the leaders of LS field



should also develop a conflict resolution mechanism within the library science educational community to reconcile differences between the existing monotonous governmental directed education system and a diversified educational model that can accommodate different individual institutional aspirations, and at the same time, can also meet the information needs of their particular constituencies.

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