

Historical Progress and Future Trends of Library and Information Science Master's Degree Education in Taiwan

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Abstract: Master's education in library science began in Taiwan in 1980 with the establishment of the Graduate Institute of Library Science at National Taiwan University. In 1993, the school changed its name to the Department of Library and Information Science and today offers seven different master's programs. The development of Taiwan's library and information science (LIS) master's education occurred in three stages: the early stage from 1980-1991, the developmental stage from 1992-2002, and the transformational stage beginning in 2002 and continuing through the present. This study investigates the historical development of LIS master's programs in Taiwan, aggregates information on the development of the seven master's programs, and describes the state and development of LIS master's education from 1980 until now, finally discussing current issues facing LIS master's education and its future outlook.



Introduction

Since 1981 library work has flourished in Taiwan, largely due to the promotion of library education and library science research. The formal educational program for training professional librarians in Taiwan began in 1955 as a division of the Department of Social Education at the Taiwan Provincial Normal College (now the National Taiwan Normal University) and has developed into today's complete library and information science education system with undergraduate programs, master's programs, PhD. programs and in-service classes. The eight Library and Information Science (LIS) schools in Taiwan offer five undergraduate programs, seven master's programs and three PhD. programs. (王梅玲,2010)

The opening of the Melvil Dewey School of Library Economy at Columbia College in the United States in 1887 marks the beginning of library science education. Currently, the American Library Association recognizes 58 LIS masters programs, and America's LIS education is renowned across the world, and the LIS master's degree is recognized as the first step in librarians' professional development. After the Williamson report, the Carnegie Corporation gave funds to support the establishment of the Graduate Library School at the University of Chicago in 1926, the first library graduate institute. Because undergraduate education lacked a foundation in the discipline, it was difficult for professional librarians to effectively fulfill their responsibilities. To this end, the US established a system of library education accreditation, with the American Library Association (ALA) responsible for accrediting library education programs. The ALA adopted a set of standards making the Master of Library Science (MLS) the basic professional degree in 1951, and within five decades it became the unquestioned standard entry-level qualification for librarians in the United States (Holley, 1986; 王梅玲, 2005). As of 2011, the ALA has accredited 58 master's programs, 36 Ph.D. programs, 16 undergraduate programs, and 20 e-learning master's programs.

Professional qualifications for librarians in Taiwan differ from those in the U.S. and include three basic parts: (1) passage of the National Civil Service Senior Examination and General Examination of Library and Information Management; (2) graduation with an undergraduate or master's degree in Library and Information Science; and (3) award of a certificate after 20 credits or 320+ hours of professional learning through



attendance of workshops and accredited classes offered by competent authorities of approved libraries or library schools. Taiwan's professional librarians must have earned a bachelor's or master's degree in library science, a requirement somewhat looser than that of the U.S. (國家圖書館, 2001).

In 1980, the Ministry of Education of the Republic of China approved Taiwan's first offering of a library science master's degree at the Graduate Institute of Library Science at the National Taiwan University's College of Liberal Arts, which continues to be offered. In 1993, the school changed its name to the Department of Library and Information Science, and today a total of seven library master's programs are available in Taiwan, including at the Graduate Institute of Library and Information Science of the National Taiwan University (NTU), the Graduate Institute of Library and Information Science of Catholic Fu-Jen University (Fu-Jen), the Graduate Institute of Information and Library Science of Tamkang University (Tamkang), the Graduate Institute of Library Information and Archives Studies of National Cheng Chi University (NCCU), the Graduate Institute of Library and Information Science of National Chung Hsing University (NCHU), the Graduate Institute of Information and Communications of Shih Hsin University (SHU), and the Graduate Institute of Library and Information Science of National Taiwan Normal University (NTNU). Additionally, there are Ph.D. programs set up at NTU, NTNU, and NCCU (王梅玲, 2011).

This study uses historical research to investigate the historical development of LIS master's education in Taiwan. First, it reports the current state of LIS master's education; second, it discusses developmental process of master's education. It divides historical development of Taiwan's LIS master's programs into three periods: the early period from 1980-1991, the developmental period from 1992-2002, and the transformational period beginning in 2002 and continuing to the present. This research centers on master's education, and it aggregates information from seven different master's programs, describing the state of their faculty, students and curricula and their historical development. Finally, it discusses current problems facing LIS master's education and the system's future outlook. This study incorporates the social, technological, economic, political, and educational levels of analysis to finally induce factors that affected development to explain the essence and characteristics of Taiwan's



LIS master's education. It is hoped that it will help to reconstruct the past as well as provide a reference for future development.

Present Status of LIS Master's Programs in Taiwan

There are seven graduate schools of library and information science in Taiwan, including National Taiwan University, Catholic Fu-Jen University, TamKang University, National ChengChi University, National ChungHsing University, ShihHsin University, and National Taiwan Normal University, all of which offer master's programs. The Digital Library and Information Section in-service master's program of the College of Electrical Engineering of National Chiao Tung University (NCTU) started in 2002 but was suspended in 2009 because of a policy change; however, the NCTU program is included in the study because of its achievements. Additionally, three schools offer in-service programs, including the NTNU In-service Master Program of Library and Information Studies, the NCCU E-learning Master Program of Library and Information Science, and the SHU In-service Master Program of Information and Communications. Basic information for the eight graduate schools of Library and Information Science is listed in table 1. (王梅玲, 2011)

School Title and Affiliated College

Of the above schools, five are titled as "Library Information Science Schools" (NTU, Fu-Jen, TamKang, NCHU and NTNU) while three have other titles, such as Schools of Archival Studies (NCCU), Information and Communications (SHU), and Digital Library and Information (NCTU). Additionally, four schools are under Liberal Arts colleges, two are under colleges of education, one is under a college of Communication, and one is under a college of Electrical Engineering. Thus, Taiwan's LIS master's programs include different characteristics of humanities, social science, and information science.

Table1. Profile of Master's Programs in Library and Information Science in Taiwan

School Title	Place	Est.	Affiliated College	Offering Programs
Dept.& Graduate Institute of Library and Information Science, National Taiwan University	Taipei City	1980	Liberal Arts	Undergraduate; Master's; PhD
Dept. & Graduate Institute of Information and Library Science, Tamkang University	New Taipei City	1991	Liberal Arts	Undergraduate; Master's



Dept. & Graduate Institute of library and Information Science, Catholic Fu-Jen University	New Taipei City	1994	Education	Undergraduate; Night Class; Master's
Graduate Institute of library, Information and Archival Studies, National ChengChi University	Taipei City	1996	Liberal Arts	Master; PhD E-learning Master's;
Graduate Institute of library & Information Science, National Chung Hsing University	Taichung City	1999	Liberal Arts	Master's
Dept. & Graduate Institute of Information and Communications, Shih Hsin University	Taipei City	2000	Communication	Undergraduate; In-service; Master's
Graduate Institute of Library and Information Studies, National Taiwan Normal University	Taipei City	2002	Education	Master's; PhD In-service;
In-service Master's Program of Digital Library and Information, National ChiaoTung University	HsinChu City	2002-2009	Electrical Engineering	In-service Master's

Source from 王梅玲 (2007)。「臺灣圖書館教育史(1954-2007年)」。臺灣圖書館事業與教育史研討會論文集，頁 69。

Faculty

In 2011, Taiwan's eight LIS master's programs employed 173 faculty members: 61 full-time and 112 part-time (see table 2). A majority of the full-time faculty are female, with 34 females and 27 males. NTU, Fu-Jen, TamKang, and SHU employ 10-12 faculty members each. Of all schools' faculty members, 53 have Ph.Ds in a wide variety of fields: 28 in LIS, 13 in computer science, 4 in management, 4 in education or educational technology, 2 in communications, and 2 in other fields. Of the part-time faculty, 71 are male and 41 female.

Table 2 Full-time Faculty Number of LIS Master's Programs in Taiwan

School	Male	Female	Total	PhD Faculty	%PhD Faculty
NTU	6	6	12	12	100%
Fu-Jen	6	5	11	8	72%
Tamkang	3	7	10	6	60%
NCCU	2	4	6	6	100%
NCHU	1	4	5	5	100%
SHU	6	4	10	9	90%
NTNU	3	4	7	7	100%
NCTU	0	0	0	0	0%
Total	27	34	61	53	87%

Master's Students

In 2010, the eight LIS master's programs had 363 students enrolled, 97 males and 262 females.. National Taiwan University has the largest enrollment with 93 students.



Fu-Jen Catholic University follows with 64, and Shih Shin University has the fewest with 28 enrolled. (See Table 3). The eight LIS master's programs graduated 128 students in 2010. In the past three decades, 1,190 students graduated from these programs, the most (323) from NTU and TamKang (254). (See table 4)

Table 3 Taiwan LIS Master's Program Enrollment in 2010

Schools	Male	Female	Sub-total
NTU	15	78	93
Fu-Jen	26	38	64
Tamkang	11	35	46
NCCU	7	26	33
NCHU	4	33	37
SHU	16	12	28
NTNU	19	43	62
NCTU	0	0	0
Total	97	262	363

Table 4 Taiwan LIS Master's Programs Graduates from 1980 to 2010

Schools	Graduate Year (2010)	Male	Female	Sub-total
NTU	28	49	274	323
Fu-Jen	18	59	132	191
Tamkang	15	65	189	254
NCCU	13	41	110	151
NCHU	11	5	63	68
SHU	9	42	30	72
NTNU	7	20	61	81
NCTU	6	19	31	50
Total		300	890	1,190

Curriculum

Graduation requirements differ across the eight LIS master's programs, principally in the areas of courses required, comprehensive exams, theses, and oral examinations. Credits required range from 26 to 32, with most schools requiring 30, exclusive of the master thesis (0-6 credits). Fu-Jen requires the most credits (32) with NTU, NCCU, NCHU, SHU, NTNU and NCTU all tied for second. TamKang requires the fewest at 26. All programs require a core of 0-16 credits together with 16-24 elective credits.

Since ShihHsin (2011) offer program in- information and communication that differ significantly from the other schools, it is excluded from the following analysis. Thus,



this study principally analyzes the curriculums of the 6 LIS master's programs (NTU, NCCU, Fu-Jen, NCHU, TamKang, and NTNU) in the areas of pre-required courses, required courses, and electives courses. The study uses web content analysis to analyze websites of the six schools for course information. (中興大學圖書資訊學研究所,2011; 政治大學圖書資訊與檔案學研究所,2011; 臺灣大學圖書資訊學系暨研究所,2011; 淡江大學資訊與圖書館學系暨研究所,2011; 臺灣師範大學圖書資訊學研究所, 2011; 輔仁大學圖書資訊學系暨研究所,2011)

Pre-required Courses and Required Courses

NTU, NCCU and NCHU require prerequisite courses to acquaint students with foundational LIS theory necessary for further studies. For example, NTU requires four: Reference Sources and Services, Information Acquisition and Organization, Foundations of Libraries & Information and Field Study.

As for required courses, six schools offer the following nine courses: Research Methods, Library and Information Science Statistics, Seminar on Library and Information Science, Seminar on Information Science, Seminar on Public Services, Seminar on Technical Services, Seminar on Information Organization, Seminar on Archival Studies and Individual Research. All six schools require the Research Methods course, but only NTNU, NCCU and NCHU require the Seminar on Library and Information Science. NTU, NCHU and Fu-Jen require the Seminar on Public Services. Only Fu-Jen and NCHU offer the Seminar on Technical Services. TamKang and Fu-Jen offer the Library and Information Science Statistics course. Overall, Fu-Jen and NTU have the most required courses and TamKang and NTNU the least. NCCU differs from the other schools in that it requires a Seminar on Archival studies for its Archive Studies Section.

Elective Courses

This study analyzes elective courses from the websites of 6 LIS master's programs and finds their elective course offerings plentiful and varied. In total, these six schools offer 235 elective courses, as listed in table 5.



Table 5 Elective Courses of LIS Master's Programs in Taiwan

Course Areas	NTU	Fu-Jen	Tam-Kang	NCCU	NCHU	NTNU	Sub-Total
Theory of Library and Information Science	0	2	2	2	1	2	9 (3.8%)
Information Resources and Collection Development	5	2	7	1	11	5	31 (13.2%)
Information and Knowledge Organization	3	5	2	2	1	1	14 (6.0%)
Users and Services	4	6	2	2	5	6	25 (10.6%)
Information Technology and Application	6	7	4	7	8	11	43 (18.3%)
Library and Information Institutes Management	8	2	0	7	11	5	33 (14%)
Digital Library and Digital Learning	3	1	1	2	2	3	12 (5.1%)
Research Methodology, Thesis and Field Studies	4	1	1	5	4	4	19 (8.5%)
Archives Management	0	0	4	14	1	1	19 (8.5%)
Other	6	5	1	2	5	10	30 (12.0%)
Total	39 (16.6%)	31 (13.2%)	24 (10.2%)	44 (18.7%)	49 (20.9%)	48 (20.4%)	235 (100%)

Historical Development

Taiwan's formal educational program for training professional librarians began in 1955 as a division of the Department of Social Education at the Taiwan Provincial Normal College (now the National Taiwan Normal University). The library science department of national Taiwan University was established in 1961 as the first department to have library science in its title. Master's education in library science in Taiwan started in 1980 with the establishment of the Graduate Institute of Library Science at National Taiwan University. In 1993, the school changed its name to the Department of Library and Information Science, and today seven different master's programs are offered throughout Taiwan. The development of Taiwan's library and information science (LIS) master's education occurred through three periods: the early period from 1980-1991, the developmental period from 1992-2002, and the transformational period beginning in 2002 and continuing to the present. This study looks back on the 31 years of the development of LIS master's education and hopes to investigate what factors led to the establishment of the master's education program; what factors precipitated the large-scale offering of these master's programs; and what problems currently face their further development.



Early Period (1980—1991)

The first library science master's program established in 1980 not only enhanced the level of library education but also contributed to the development of librarianship. From 1980 to 1991, Taiwan's master's and doctoral programs in library science increased and grew strong on the basis of undergraduate programs. Taiwan's economic prosperity led to social, cultural, and political stability. In 1977, the government proposed the "National Cultural Construction Plan" which would establish cultural centers in the cities and counties. The Plan was implemented in 1979, and many library-based cultural centers were built, (王振鵠, 1993); thus, national development policies were key to the birth of the master's programs in library science. In addition, advances in computer and information technology necessitated more scientists and master's degree holding librarians. The former director of the National Central Library, Chiang Fu Chong (蔣復璁, 1983), made a speech at the Annual Meeting of the Library Association of China to request the establishment of a graduate institute in library science to cultivate master's degree librarians just like the MLS degree had become the standard entry qualification for librarians in the United States. Director Chiang's forward-looking insights guided and enhanced Taiwan's level of library education.

Although the Taiwan National University Academic Council passed a proposal to establish a library science graduate institute in 1978, the Ministry of Education did not approve it until the beginning of 1980. The Taiwan National University Proposal for the Establishment of the Graduate Institute said that it was established because the current Premier Chiang Ching-kuo was undertaking cultural reform and required library leadership. The program's objectives were "to improve the quality of teaching and research in library schools and cultivate leaders for library work." (臺灣大學圖書館學系, 1977). The first class matriculated four students. Graduation required earning 24 credits—10 required and 14 elective—reaching second language competency, and passing a departmental examination and an essay test. The five required courses included Research Methods, Library Administration Seminar, Reader Services Research, Technical Services Seminar, and Information Science Seminar (Hu, 1986).

The first library science doctoral program was established in 1988 at National Taiwan University, and enrollment began in 1989. Enrollment required a master's



degree and at least two years' professional library experience. One student enrolled the first year. The program's objectives were (1) to cultivate leaders in library and information services in line with the national information industry development and cultural development policies; (2) to nurture excellent faculty and researchers for library science schools; (3) to cultivate excellent librarians for academic libraries and information centers; and (4) to cultivate senior researchers integrating Library with Information Science and Technology. Graduation required completion of 30 credits within two to six years (not including the thesis); a written examination in four specialized fields of study; and a dissertation and oral examination (臺灣大學圖書館學研究所, 1986).

The second master's program in library science was established in 1991 at the Graduate Institute of Educational Materials and Science Research, Tamkang University, which was to explore the research and teaching of new information communication technology and its application in library information services and education. The master's program's objectives were to cultivate teaching professionals and administrative staff in library science and in information science and educational technology, which was divided into two sections, the Library and Information Science Section, and the Instructional Technology Section. (盧荷生, 1993)

In 1991, the Ministry of Education commissioned the Committee for Library and Information Education Improvement. Many problems were found in Taiwan's library education: the traditional education and curriculum were out of date, in-service education was too limited and library salaries were rigid and employment recruitment low such that library education could not advance and improve. The committee proposed the following major recommendations: (1) Library Science and Information Science should be integrated into one master's education and the integration should be reflected in the new title of Library and Information Science. (2) Library science courses must be improved to meet the needs of libraries, and a Library and Information Science Curriculum Research and Development Commission should be organized to draw up Library and Information Science Education Standards and an accreditation system of educational programs similar to the LIS program accreditation system in the U.S. (3) A Library Law should be passed as soon as possible to set up a library staffing system of three levels of professionals, administrative staff and technical staff, and five



levels of professionals including research librarian, associate research librarian, assistant research librarian, librarian and assistant librarian; (4) The Ministry of Education should appoint a commission to survey the national library workplace and investigate library education (胡述兆;盧荷生, 1993).

At this stage, in accordance with social stability, economic prosperity and cultural development, library education in Taiwan was upgraded from a bachelor's program to master's and doctoral programs with a total of two master's programs at National Taiwan University and Tamkang University. The Library Education Report of 1993 reviewed a number of Library education issues and suggested that library science and information science should be integrated, that curriculum could be improved, that human resource systems at all staff levels required vast improvement, and that a proposed Library Law be enacted. These suggestions were carried out during the next period.

Developmental Period (1992-2001)

As the 21st century approached, information technology advanced, the Internet spread, higher education underwent reform, and Taiwan's universities flourished. The Archives Act and the Library Law were enacted in 1999 and 2000, respectively, and expectations for library and archive development grew. Changes in society and the information environment changed the titles of library science master's programs and encouraged the programs' rapid development.

As society changed and foreign library schools were changing their titles, domestic library schools also faced the challenge of updating their titles. Amidst this turmoil, Catholic Fu-Jen University's Department of Library Science was the first approved in 1992 to change its title to "Library and Information Science". In 1994, the school established the Graduate Institute of Library and Information Science, aiming to create management professionals for libraries, cultural centers, and information agencies and to promote the study of information and library science theory for the establishment of the Chinese Library and Information Science. Other library schools also changed their titles, such as National Taiwan University in 1997, which now boasted a Department of Library and Information Science; similarly, Tamkang University adopted the title Department of Information and Library Science in 2000. (王梅玲, 2007)



As Taiwan's reform of higher education progressed, a large number of new universities were established, laying a foundation for the rapid growth of the Library and Information Science schools. The Graduate Institute of Library and Information Science at National ChengChi University was established in 1996 to meet the needs of the national culture development plan to create professionals for libraries, cultural centers, information centers, museums, archives and other agencies. Just as in 1999 when the Archives Law was promulgated, cultivation of archives management professionals of all levels was urgently needed. In 2002, the school was renamed the Graduate Institute of Library, Information and Archives Studies, and it suspended musicology education. The institute is subdivided further into a Library and Information Science Section and an Archival Studies Section. Notably, the Archival Studies Section was the first program of professional archivist education in Taiwan (政治大學圖書資訊與檔案學研究所,2001). Since then, other library and information science schools have also provided archival management courses.

In 1999, the Graduate Institute of Library and Information Science at National Chung Hsing University was established with 10 enrolled in its first class. This was the first Library and Information Science school in central Taiwan. The school's objectives were to integrate traditional library science and information science theory, to apply information technology and to train library professionals to meet the needs of the information age (王梅玲,2001). The Graduate Institute of Library and Information Science of Shih Hsin University was established in 2000.

At this stage, due to the establishment of the LIS doctoral program, the promulgation of the Library Law and Archives Law, and an emphasis on archiving, master's degree programs greatly increased in Taiwan. Four new master's programs were established in addition to those of National Taiwan University and Tamkang University: at Fu-Jen, NCCU, NCHU and SHU. Further, professional archival education began to take off in Taiwan.

Transformational Period (2002—to Present)

The Government of Taiwan has carried out a "National Digital Archives Program" since 2001. The program digitizes the precious collections of libraries and museums to preserve cultural assets and builds public information systems to facilitate



the integration of information technology with the humanities, as well as to promote industrial and economic development (國家型數位典藏計畫, 2003). These projects' great demand for digital archiving professionals influenced the transformation of library and information science education and brought about two new master's programs at the National Normal Taiwan University and the National ChiaoTung University.

In 2001, the Department of Library and Information Science at Shih Hsin University changed its title to "Information and Communications" in response to new developments in information and communications. The new school's objectives were to promote digital content design, internet information management, value adding and marketing. The school's curriculum is divided into three areas: information science and technology, network communications technology and library management and services. (王梅玲,2001)

In 2002, to meet the digital society's needs for the dissemination of digital information services and research, the Graduate Institute of Library and Information Studies at National Taiwan Normal University was established to train librarians and information services professionals and researchers (中國圖書館學會,2002年6月30日). That same year, the College of Electrical Engineering of National Chiao Tung University set up a new in-service master's degree program: "Digital Library and Information Section," which would enroll ten students a year. The school's objectives were to make students competent in constructing and processing digital libraries including acquiring, preserving, organizing and collecting digital information as well as providing user access to, using, and processing information through communications networks (中國圖書館學會,2002年9月30日). However, as the university's policies changed, the Digital Library and Information master's program at NCTU was suspended in2009.

As library and information science research grew and digital library projects became popular, the Ph.D. program of Library and Information Studies at National Taiwan Normal University was established in 2009 with approval of the Ministry of Education. The program's objectives were to create academic researchers and management leaders to meet the needs of society's economic pulse (臺灣師範大學圖書資訊學研究所, 2009). The Ph.D. program of the Graduate Institute of Library and Information



and Archives Studies at National ChengChi University was approved in 2010 to be the third library doctoral program in the Republic of China, which, with an enrollment capacity of three, aims to cultivate researchers and leading professionals on libraries, archives, digital libraries, and digital learning. (政治大學圖書資訊與檔案學研究所, 2011)

As E-learning development became a global trend, distance education in LIS started with the Department of Humanities at Open University, which provided Library and Information Science courses through television and broadcasting, benefiting a number of library workers. Some Library and Information Science schools such as the National Taiwan University, National Chengchi University and Taiwan Normal University set up asynchronous distance learning courses. The Ministry of Education has encouraged universities to provide e-learning in-service master's programs since 2009. The Graduate Institute of Library Information and Archives Institute of NCCU was accredited to provide an e-learning in-service LIS master's program in 2009 to foster professionals in information literacy education, library management, and e-learning. The first e-learning master's program matriculated 22 students. This first e-learning LIS master's program provides six online courses: Library and Information Science Seminar; Information, Organization and Access; School Library Management; Digital Libraries; Research Methods; Archives Management. Separately, another six courses are taught in classrooms. Graduation from the e-learning LIS master's program requires completion of 30 credits of course work (excluding the thesis), and completion of a thesis (政治大學圖書資訊與檔案學研究所, 2009).

During this stage, NTNU and NCTU began offering LIS master's programs; however, NCTU was suspended in 2009, leaving a total of seven Taiwan schools offering such programs. To keep pace with the development of digital technologies and digital libraries, Taiwan's LIS master's programs offer courses covering many specific areas including information communication, digital libraries, archival management and digital publishing. In addition, new e-learning courses and e-learning programs in library and information science are offered.

Discussions and Conclusion



This study mainly explored the history of LIS master's education in Taiwan. Focusing on the seven master's programs, six important events in the history of their development have been identified: (1) the organization of the first master's program of Library Science in 1980; (2) the founding of the first doctoral program of Library Science in 1989; (3) the Library School's title change to the Department of Library and Information science in 1993; (4) the rapid growth of the LIS master's programs; (5) the diversity of curricular themes covered by the LIS master's programs, including library and information science studies; archival studies; information communication; digital publishing; and digital libraries; and (6) development of the new Digital Learning master's program. Based on the analysis of these important events above, this study concludes the following as key factors influencing LIS master's education in Taiwan. In addition, this study also analyzes problems currently facing Taiwan's LIS master's education and looks forward to its possible future.

Influential Factors

The government's cultural projects required a greater number of leading librarians. The government needed leading librarians to head county cultural centers. National Library Director Chiang also called for the establishment of graduate schools to train librarians.

The Library Science doctoral degree contributed to the development of the master's programs. The establishment of the LIS doctoral program at NTU furthered development of the master's programs and library work. Since some faculty members who had studied in America were responsible for the Ph.D. program, the American model exerted some influence on the LIS master's programs.

The development of information science and information technology influenced LIS master's education. Developments in information science and technology require the creation of new courses such as Library Automation, Information Science and Information Technology, and inspire name changes like the Library School's in 1993. The LIS master's program's recruitment of new faculty members with doctoral degrees in other fields like computer science, management and information management, changed the nature of LIS teaching and research.

Higher education reform, competition, and the pursuit of excellence contributed to the rapid growth of Taiwan's LIS master's programs. The LIS master's programs



offer plentiful specific areas, such as Archival Management; Information Communication; and Digital Library and Information.

The promulgation of the Library Law and the Archives Law promoted the development of many libraries and archives in Taiwan. The laws also help the establishment of the LIS master's programs and initiated formal archival education in Taiwan.

The national digital library projects exerted influence. Due to the Taiwan Digital Archives Projects' great demand for digital archiving and digital library professionals, NCTU established an in-service master's program on Digital Librarianship. NTNU, NCHU, NCCU and SHU also offered many courses on digital content and digital archiving to cultivate professionals.

Current Problems Facing Taiwan's LIS Master's Programs

The LIS master's programs lack a Taiwanese accreditation mechanism. Because the Library Association of Republic of China does not play the role of professional accreditor like the ALA in the U.S., libraries' professional status in society is hindered.

LIS master's programs lack core common values. LIS master's education lacks self-discipline and does not establish core values or curricula across programs. This allows for the availability of a diversity of LIS education, but the programs lack shared core values, vision, and strategies

LIS graduate schools are too small-scale and lack their own educational brands. The scale of LIS schools in Taiwan is smaller than analogous American schools. Each graduate school has only 5 to 7 faculty members and fewer than 100 master's students. None of the schools target specific market segments. This small scale and generic education hinder the development of Taiwan's LIS master's programs.

Although the master's programs offer many specialized tracks, they fail to meet the market's needs. The programs provide many specification tracks of courses like Library and Information Science, Archival Management, Information Communication, Digital Library and Information, and Digital Publishing. However, the schools' failure to meet market needs causes an imbalance between educational supply and market demand.



The programs do not respond to the new digital library paradigm with new types of LIS education. Taiwan's Digital Library national projects have encouraged many academic libraries to set up digital archiving and institutional repository programs that are creating a new digital library paradigm. However, the LIS master's programs have not responded to this trend.

Taiwan's LIS masters' education fails to strike a balance between academics and library practice. Because of competition and in pursuit of academic excellence, LIS schools have begun to evaluate the balance between their professional and academic development. Should they emphasize cooperation with libraries or the pursuit of research and academic publication? Their goal is to balance the quality of academics and professional practice in their master's programs.

There are problems integrating library science with information science. Libraries extensively adopt information science and technology. But which aspect is core to library science, library studies or information science? Further, the LIS schools recruitment of faculty from diverse academic backgrounds introduces doubts about the multifaceted nature of the discipline's development.

Future Prospects

In view of development trends in the U.S. and the worldwide, this paper makes the following suggestions for the future of Taiwan's LIS master's programs: (1) An appropriate accreditation system for the LIS master's programs recognized by the Library Association of the Republic of China with the Ministry of Education's approval should be established. A guideline standard of LIS programs should be proposed requiring evaluation of the seven master's programs every five years. (2) The Library Laws should be amended to delineate three to five levels of library professional with different responsibilities and salaries. First level assistant librarians would have a bachelor's degree in library and information science; and second level librarians would have a master's degree. (3) The LIS master's programs could be developed with different specifications according to each school's characteristics. For instance, NCCU could specialize in archival studies; NTNU in school libraries and media centers; NTU, NCCU, and NCHU in digital libraries; Fu-Jen in information systems and management; SHU in information communication; and TamKang in publishing and digital communication studies. (4) The LIS schools are encouraged to establish undergraduate



courses or programs in order to increase their numbers of students and faculty and enlarge their influence. (5) The LIS master's programs are encouraged to develop digital learning courses and programs in order to strengthen librarian training. (6) The Chinese Association of Library and Information Science Education is encouraged to establish academic communities for faculty members with different backgrounds to promote their exchange of teaching and research ideas.

The LIS master's programs began in 1980, and seven master's programs have developed to train not only the librarians working for more than 5000 libraries, but also many professionals in the fields of archival management, digital archives, digital publishing, information communication, and digital learning. However, many programs only offer master's degrees and the schools are small-scale, making it hard for them to take responsibility for developing excellent education and research. Facing the digital era, the research and development of library and information science has turned toward a new paradigm of digital libraries, confronting our LIS master's education with challenges of transformation and reform. We need to restart the mechanisms for reforming library and information science education and to review the current education situation and propose new strategies and actions. Then, Taiwan's LIS master's education will meet the needs of the market and the new libraries and once again lead the curve in the digital age.

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