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Innovation in Library & Information Science in the Age of Big Data

Edited by

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Edited by

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Preface

The 7th Asia-Pacific Library & Information Education and Practice Conference (A-LIEP 2016) is held in Nanjing, China on 3-4 November 2016. It is the first time for A-LIEP to be held in mainland China. A-LIEP 2016 is organized by Nanjing University in collaboration with Nanjing Agricultural University and Nanjing University of Science & Technology.

The conference chair is Professor *Qingbao Zhu*, Vice President of Nanjing University, and the conference executive chair is Professor *Jianjun Sun*, Dean of the School of Information Management, Nanjing University. Dr. *Qinghua Zhu* from Nanjing University, Dr. *Christopher Khoo* from Nanyang Technological University, Singapore, and Dr. *Shiyan Ou* from Nanjng University jointly serve as the Program Committee Co-chairs.

The Asia-Pacific Conference on Library & Information Education and Practice (A-LIEP) is a recognized event on the Asia-Pacific region research conferences calendar. Under different socio-economic, political and cultural environments, countries in Asia-Pacific have their own characters, flavors and areas of strength in Library & Information Science (LIS) research. The A-LIEP conference provides an opportunity for LIS educators, researchers and practitioners to meet and discuss their research, experiences and innovations in LIS education and practice from all over Asia and Pacific.

The theme of this year's conference is "Innovation in Library & Information Science in the Age of Big Data". It focuses on examining new challenges and developments in LIS, in particular potential paradigm shifts in the age of big data. Three keynote speakers will give thought-provoking perspectives based on their rich experience in the field. *Prof. Feicheng Ma* from Wuhan University, China will address the issue of organization of user needs information in the big data environment. *Prof. Allen H. Renear* from the University of Illinois Urbana Champaign, USA will introduce data science and the information profession. *Prof. Il-Yeol Song* from Drexel University, USA will present the opportunities and challenges of iSchools in the age of big data.

There was an enthusiastic response to the Call-for-Papers. We received 97 full-text submissions from 15 countries/regions including USA, Japan, Singapore, Thailand, China and so on. After a strict peer review process, 39 long papers, 28 short papers and 8 posters were accepted and published in these Conference Proceedings. These papers cover a wide range of topics and perspectives, including cultural information communication between developing regions and the global information space, academic social network services, commercial information needs, strategic management for information technology and many others. We do thank the authors for contributing these interesting and good-quality papers to the conference.

A selection of the best papers – agreed on by a panel of reviewers and the editor will be considered for publication in *LIBRES e-journal (Singapore) and the Journal of Data and Information Science (China)*. Selection will be based on the quality of writing and relevance

to the journals' objective of publishing papers that offer new insights or practical help to library and information science and education.

We take this opportunity to thank the international program committee members and reviewers who took great effort to publicize the conference and review the papers. The same appreciation is also extended to the local organization staff and student volunteers whose hard work assure the success of the conference. We would also like to thank *ASIS&T Asia-Pacific Chapter* for the support to the panel discussion and dinner reception. We are also appreciative to three journals – *Library and Information Service*, *Library & Information*, and *Digital Library Forum* -- and six companies – *Elsevier*, *ProQuest*, *CNKI*, *VIP*, *SuperStar*, *and Innovative Interfaces* – for their support to the conference in various ways.

We wish you a stimulating and enjoyable conference, and a pleasant stay in Nanjing!

Jianjun Sun, Qinghua Zhu

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Collaboration in Library and Information Science Education between Mainland China and Taiwan (Paper ID: 79)

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ABSTRACT

Background. The cross-strait library and information science education (LISE) has made great progress in collaborations for the past decades and a solid foundation for the cross-strait LISE collaborations has been laid. Nowadays, the cross-strait economies are working more closely, exchanges among people are increasing, and LISE is facing numerous challenges. However, the areas of collaboration in LIS education between Mainland China and Taiwan are not enough broad. In order to meet the challenges and to better grasp the opportunities for LISE development, the cross-strait LIS schools need to further promote and strengthen cross-strait collaborations.

Objectives. This paper provides an overview of the historical and current status of LISE in Mainland China and Taiwan, examines the similarities and differences, and discusses collaborative activities. It analyzes the main problems, proposes strategies for successful collaboration in LISE, and also puts forward some suggestions and recommendations.

Methods. A literature survey method was adopted throughout this study.

Results. Since the 1990s, there have been numerous LISE mutual visits, exchanges and collaborations between Mainland China and Taiwan that have been promoting the common progress. To solve the main problems, it is recommended that LIS schools strengthen future collaborations in all aspects and in more diverse forms, develop more effective initiatives, and provide more financial supports for future collaborative initiatives.

Contributions. This study would be helpful and useful for people to better understand the collaboration in LISE between Mainland China and Taiwan, and for the cross-strait LIS schools to improve the LISE collaboration in the future.

INTRODUCTION

Due to historical reasons, library and information science education (LISE) in Mainland China and Taiwan has experienced different stages of developments. Librarianship in Mainland China was influenced by the former Soviet Union from 1949 to 1972 whereas librarianship in Taiwan was deeply affected by American library science education during this period. Library science education in Taiwan, originated in the mainland, has its own unique characteristics now. Since the 1990s, the cross-strait library and information science education (LISE) has made great progress in collaborations for the past decades and a solid foundation for the cross-strait LISE collaborations has been laid. Nowadays, the cross-strait economies are working more closely, exchanges among people are increasing, and LISE is facing numerous challenges. However, the areas of collaboration in LIS education between Mainland China and Taiwan are not enough broad (Sui & Wang, 2014b, p. 14; Zhang, 2009b). In order to meet future challenges, better grasp the opportunities for LISE development, improve and expand the curricula, and provide high quality teaching and research, the cross-strait LIS schools need to further promote and strengthen cross-strait collaborations.

This paper provides an overview of the historical and current status of LISE in Mainland China and Taiwan, examines the similarities and differences, and discusses collaborative activities. It analyzes the main problems, and proposes strategies for successful collaboration in LISE and between LIS schools in Mainland China and Taiwan. It also puts forward some suggestions and recommendations that are helpful to further improve collaboration in LISE, and to promote the common development and prosperity of LISE in Mainland China and Taiwan in the digital age.

HISTORICAL AND CURRENT STATUS OF the Cross-Strait LISE

Near the end of the 19th century and at the beginning of the 20th century, Western library practices and librarianship were introduced to China by the Western missionaries as well as Chinese intellectuals and reformers (Yi, 2014). This laid a solid foundation for the establishment and development of modern library science education. After the overthrow of the Qing dynasty in 1912, libraries developed very quickly. "The New Culture Movement", "The New Library Movement" and even ordinary people's participation in the vigorous librarianship construction made it necessary to train library staff and to establish library science programs (Yi, 2013).

Many library science programs were gradually established, which was the demonstration of the first prosperous period of library science education in China. Library science education started with the offering of the first library science courses at the University of Nanjing Jinling in 1913 (as cited in Lin, 1985, 371; Lu, 1997, p. 3; Wu and Zheng, 1997, 3). In 1920, a vocational library science program for the training of library staff was established at Peking High Normal College, and there were such programs offered during the 1920s and a few vocational library science schools (Lin, 1985, p. 372). In March 1920, the Division of Library Science at Boone University in Wuchang was officially set up after two-year preparations and Mary Elizabeth Wood, an American librarian, founded the Boone Library School with Zurong Shen and Qingsheng Hu who studied library science in the USA, the first library school, at Wuchang in 1920 (Zhan, 2001). In 1925, another library science program was established at Shanghai Guomin University (as cited in Lin, 1985, 371; Lu, 1997, p. 3). In 1928, a Division of Library Science was founded at the University of Nanjing, and it was closed in 1943 (Lin, 1985, 371). In 1941, the Department of Library Science at the National College of Social Education was established (as cited in Lin, 1985, 371-372). The Department of Library Studies were founded in 1947 at Beijing University (Peking University, 2016).

Due to historical reasons, LISE in Mainland China and Taiwan has experienced different stages of developments. With the establishment of the People's Republic of China in 1949 and the rapid developments of all types of libraries, the library science education and its curricula had steadily developed until 1965 and were stagnated during the period of the Cultural Revolution from 1966-1976. Since the reform and opening to the outside world in 1978, Chinese libraries have developed at a rapid and steady speed. With the rapid developments of science and technology, more and more library and information science programs have been created in colleges and universities across the country. The post-contemporary period (1978-present) is the best period of the developments of China's library and information science education and its curricula.

Since 1979, four main levels of library and information science education have been formed. The first level consists of doctoral and graduate education programs. The undergraduate education of library science is the second level. The third level is secondary school library education. The final level is adult education and continuing education. The rapid developments of science and technology and the use of technologies of computer, information, digitization, multimedia, network, optical disc, microforms and audio and video in libraries and information centres brought the trend for the name change of the library and information education programs in the 1980s and 1990s. Since China's opening to the outside world, four large-scale academic undergraduate major amendments had been conducted in 1987, 1993, 1998 and 2012, and there are 51 LISE departments and schools (Zhao, 2010, pp. 15-17).

In comparison with the library science education in Mainland China, there was no library science program in Taiwan before 1949, and in 1949, partial library collections were shipped from Mainland China to Taiwan, which gradually changed the librarianship situation during the Japanese occupation era (Sui and Wang, 2014a, p. 76). In 1954, Mrs. Marian Orgain taught a one-year and six-credit course entitled "Library Science" that was the first course offered at the Taiwan University (Wu and Zheng, 1997, p. 161).

The first formal library science program in Taiwan was established in 1955 by Department of Adult & Continuing Education, Taiwan Normal University, and with the economic takeoff in Taiwan during 1960s-70s, library science education began to flourish and there were 8 universities offering library science courses (Lin, 2004; Sui and Wang, 2014a, p. 76). According to Lin (2004), "through decades of efforts and development, the library and information profession in Taiwan now has ten institutes officially provide library and information science (studies or its kind) programs that ranges from bachelor degree to doctorate, plus one distance education program, a specialized program, and a credit-grant certificate program", and there are 11 LISE departments and schools (Zhao, 2010, p. 18).

THE CROSS-STRAT LISE SIMILARITIES AND DIFFERENCES

LISE between Mainland China and Taiwan has the same origin. Library science education in Taiwan was originated from the Mainland China, and library concepts, thoughts and technical methods that were brought to Taiwan when Kuomintang (KMT) moved to Taiwan had promoted the developments of libraries and library science education in Taiwan (Zhang, 2009b, p. 105). For example, in 1929, Guojun Liu, a former university librarian of Nanjing Jinling University, edited "the Chinese Library Classification" based on the Dewey classification, and after KMT moved to Taiwan, the Chinese classification method continued to be used and is currently used in all types of libraries in Taiwan (Zhang, 2009b, p. 106). In 1964, Yongxiang Lai, Professor of Taiwan University and Head of Library Science Department, updated Liu's Chinese classification method and complied the index, and until 2001, the "Chinese Library Classification" has been revised for over eight times (Zhang, 2009b, 106).

LISE between Mainland China and Taiwan has maintained the traditional theories and methods of librarianship and modern theories, practices, techniques and approaches of foreign librarianship and LISE have been utilized and assimilated to develop and enrich their own traditional theories and methods (Zhao, 2010, p. 13). With the rapid developments of communications and information technologies, the LISE departments and schools experienced the same name change period between the 1990s and the beginning of 21st century, and the LISE similarity between Mainland China and Taiwan also reflects in fact that there are four main levels of library and information science education from continuing

education to master and doctoral education programs (Yang, 2004, p. 46; Zhang, 2009b, p. 106; Zhao, 2010, p. 13).

There are some LISE differences between Mainland China and Taiwan. Firstly, Mainland China and Taiwan have experienced different LISE development stages. The library science education was stagnated during the Cultural Revolution whereas it was steadily developed in Taiwan. Secondly, the factors influencing the LISE development between Mainland and China are different. The social, political, economic, cultural and educational elements are important factors influencing the LISE development. With the rebuilding of national infrastructures and diplomacies after World War II and the founding of the People's Republic of China, Sino-American ideologies diverted drastically and Sino-Soviet relationships became dominant. Sino-American diplomatic relations were terminated in 1949, the mutual library exchange and cooperation ceased, but libraries proliferated during this Sino-Soviet period. Chinese library studies soon placed emphasis on Russian and Soviet library science rather than American (Cheng 2001; Cheng 1994; Yi & Thompson, 2015).

Since KMT moved to Taiwan, LISE in Taiwan has been deeply affected by American library science education (Yan and Zhang, 2015, p. 084). With the economic takeoff in Taiwan during 1960s-70s, library science education began to flourish and there were 8 universities offering library science courses (Lin, 2004; Sui and Wang, 2014, p. 76). Since the reform and opening to the outside world in 1978, LISE in Mainland China has been rapidly and steadily developed. Thirdly, the educational objectives are different. The training objectives in Mainland China focus on students' mastery of basic theories and knowledge and skills of using modern technologies to develop resources and services for users whereas the training objectives in Taiwan emphasize the course specialization training, the applications of information technologies to the LISE and students' integrative mastery of skills and knowledge (Zhao, 2010, p. 20). Fourthly, the educational level emphasis is different. LISE in Mainland China mainly puts emphasis on the undergraduate level whereas LISE in Taiwan focuses on the Master's level (Zhao, 2010, pp. 18-19). Finally, the LISE scale in Mainland China is larger than that in Taiwan (Wang, 2011; Yang, 2008) and the LISE in Taiwan was more advanced than that in Mainland China (Tan, 1997, p. 33).

COLLABORATION IN THE CROSS-STRAIT LISE

Collaboration is one of the key LISE terms. There are numerous definitions and meanings of collaboration. According to Ecosystem Management Initiative (2002), collaboration is defined as "a process where two or more individuals or organizations deal collectively with issues that they cannot solve individually", and viewed as "a partnership, alliance or network, aimed at a mutually beneficial clearly defined outcome" (The Commonwealth of Australia, 2004, p.1). The importance of collaboration lies in "the advancement of Library and

Information Science as a science and a profession" and it is helpful for the LIS schools to achieve the mutual goals and objectives (Sacchanand, 2012). There are many benefits of collaboration and collaboration "involves knowledge, skills, and techniques' sharing and transfer; enables visibility; and by using collective effort may solve problems faster" (Ocholla, 2008, p. 469).

Collaboration has taken many various forms including "collaboration between individuals; among groups; among departments, within departments, inter-departmental; within institutions, inter-institutional; within sectors, inter-sectoral;countries – national/international;orregional/inter-regional" and collaborative activities refer to "joint research, faculty and student exchange schemes and visiting fellowships, conferences and workshops, shared online resources, electronic forms, and learning accreditation or standards initiatives" (Ocholla, 2008, as cited in Al-suqri, 2010, p. 49). The cross-strait LISE faces numerous challenges such as the internaltionalization of the changing higher education environments, rapid developments of communications and information technologies, globalization, digitization and knowledge-intensive economies. To meet the future challenges and to maintain the cross-strait LISE future sustainability, there is a need to further strengthen the collaboration between the LIS departments and schools of universities as well as between universities and associations, and to further strengthen the international collaboration.

As indicated in Table 1 below, the cross-strait LISE collaboration began in September, 1990 when Prof. Zhenhu Wang and other 13 experts including Prof. Baohuan Shen, son of Zhurong Shen who was known as Samuel T. Y. Seng, founded the Boone Library School [also known as the Wenhua Library School] with Mary Elizabeth Wood in 1920 and is considered the "Father of Library Science in China", visited more than ten libraries and LIS departments at Beijing University, Beijing Normal University and Wuhan University, which was the new chapter of the cross-strait ILSE exchange and collaboration (Sui and Wang, 2014a, p. 75). In 1992, Chinese Association of Library & Information Science Education was founded in Taiwan, and since 1992, it has consistently promoted the LISE collaborative activities between Mainland China and Taiwan.

On February 19, 1993, at the invitation of the Department of Library Science and Library Science Institute of Taiwan University, Prof. Feizhang Peng, Head of the School of Library and Information Studies at Wuhan University, Prof. Wenjun Zhou in the Department of Information Management at Beijing University and Prof. Yu Cheng in the Department of Library and Information Science at East China Normal University and other 3 experts completed a 14-day visit including attending the annual conference of Chinese Association of Library & Information Science Education and visiting LISE departments and libraries (Zhang, 2009b, pp. 106-107).

Since the 1990s, there have been numerous LISE mutual visits, exchanges and collaborations between Mainland China and Taiwan that have been promoting the common

progress. The main collaborative activities displayed in Table 1 below include mutual visits between heads of schools and academic staff, student visit, joint conferences, students' forums and the signed agreements on exchanges and collaborations between LIS departments and schools.

Table 1. The main cross-strait LISE collaborative activities		
1	2-20/09/ 1990	At the invitation of Library Society of China, Zhenhu Wang and other 13 experts visited the LIS departments and libraries in Mainland China and held a number of discussions and exchange activities.
2	05/1992	Five professors and directors from Taiwan were invited to attend the International Symposium on the Modern Library Collections and Resource Sharing that was jointly organized by Northwestern University of Technology and East China Normal University.
3	19/02/1993-04/03/1993	Feizhang Peng, Wenjun Zhou and Yu Cheng and other 3 experts attended the annual conference of Chinese Association of Library & Information Science Education and visited LISE departments and libraries in Taiwan.
4	1-10/07 /1993	Prof. Shuzhao Hu at Taiwan University and 10 LIS graduate students completed the graduate students' exchange activities at East China Normal University in Shanghai.
5	12-18/12 1993	The 1st Cross-strait Conference on Library and Information Science jointly organized by the Chinese Association of Library and Information Science Education in Taiwan and East China Normal University was held at East China Normal University.
6	22-24/08 1994	The 2nd Cross-strait Conference on Library and Information Science was held in the Department of Information Management at Beijing University.
7	04/1994	At the invitation of School of Information Management at Nankai University, Prof. Dezhou Li gave short-term lectures.
8	06/1996	Prof. Xiangjin Tan visited LIS departments and libraries and gave lectures in Taiwan.
9	30/03-02/04 1997	The 3rd Cross-strait Conference on Library and Information Science was held in the School of Library and Information Science at Wuhan University.
10	03/1998	The 4th Cross-strait Conference on Library and Information Science was held in the School of Library and Information Science at Zhongshan University.
11	08-10/1999	At the invitation of the Department of Information Management at Beijing University and the School of Information Management at Wuhan University, Prof. Shuzhao Hu gave lectures on research methods of librarianship and made an academic speech in the School of Information Management at Hebei University on October 5, 1999.
12	08/2000	Academic staff and students in the Graduate Institute of Library, Information and Archival Studies at Chengchi University visited the Department of Information Management at Beijing University and the Archival School at Renmin University of China.
13	28-30/08/ 2000	The 5th Cross-strait Conference on Library and Information Science was held in Chengdu, Sichuan.
14	2002	The 6th Cross-strait Conference on Library and Information Science was held in the library of Heilongjiang province.
15	2004	The 7th Cross-strait Conference on Library and Information Science was held at Dalian University of Technology.
16	2005	At the invitation of the Department of Information Management at

		Zhongshan University, Prof. Ligui Xue in the Graduate Institute of Library, Information and Archival Studies at Chengchi University gave lectures on advanced research on archives for months.
17	2005	The agreement on exchanges and collaboration was signed by the Department of Information Management at Zhongshan University and the Department of Information and Communications at Shih Hsin University.
18	05/2005; 06/2006; and 09/2006	Qingshan Zhou, Professor in the Department of Information Management at Beijing University, Chuanfu Cheng, Professor in the School of Information Management, and Shizhong Huang, Professor in the Department of information Management at Zhongshan University respectively visited the Graduate Institute of Library, Information and Archival Studies at Chengchi University and gave lectures.
19	20/06/2006	The agreement on exchanges and collaboration was signed by the Department of Information Management at Zhongshan University and the Graduate Institute of Library, Information and Archival Studies at Chengchi University.
20	18-22/06/ 2006	The 8th Cross-strait Conference on Library and Information Science was held in the School of Information Management at Zhongshan University.
21	19/06/2006	The 1st Cross-strait Graduate Students' Forum on Library and Information Science was held in the Department of Information Management at Zhongshan University
22	10/2006	The agreement on exchanges and collaboration was signed by the Graduate Institute of Library, Information and Archival Studies at Chengchi University and the School of Information Management at Wuhan University.
23	09/2006; 06/2007; and 04/2007	Profs. Junping Qiu and Chuanfu Cheng in the School of Information Management at Wuhan University, and Prof. Yingjiao Ye in the Department of Information Management at Zhejiang University visited the Department of Information Management at Taiwan University and gave lectures.
24	09/2006; 10/2007	Profs. Shumei Cheng and Muxuan Huang in the Department of Information Management at Taiwan University respectively attended the Open Forum on Librarianship that was held in the Department of Information Management at Beijing University and gave lectures.
25	03-06/07/ 2008	The 9th Cross-strait Conference on Library and Information Science was held in the School of Information Management at Wuhan University. At this conference, more than 30 heads of the cross-strait departments and schools held the talks about the LISE problems and issues and how to solve the issues through collaborative activities.
26	04/07/2008	The 2nd Cross-strait Graduate Students' Forum on Library and Information Science was held in the School of Information Management at Wuhan University.
27	05-07/07/ 2010	The 10th Cross-strait Conference on Library and Information Science was held in the School of Information Management at Nanjing University.
28	05-05/07/ 2012	The 11th Cross-strait Conference on Library and Information Science jointly organized by Tamkang University, the Chinese Association of Library and Information Science Education, as well as Wu Han University's Information Resources Research Center was held at Tamkang University's Tamsui Campus in Taiwan.
29	06-10/07/ 2014	The 12th Cross-strait Conference on Library and Information Science was held in the Department of Information Management at Nankai University.
30	12-14/07 /2016	The 13th Cross-strait Conference on Library and Information Science was held in the Department of Information Management at Central China Normal University.

Sources: (Sui & Wang, 2014a, pp. 75-77; Sui & Wang, 2014b, pp. 10-12; Tan, 2010, pp. 8-9; Wang, 2000, pp. 7-10; Wu & Fu, 2013, p. 84; Yang, 2004, p. 48; Yang, 2006, p. 8; Zhang, 2009a, p. 083; Zhang, 2009b, pp. 106-107)

MAIN PROBLEMS

Currently, the LISE in Mainland China has developed well. However, there still exist some problems that need to be solved with regard to the LISE collaboration in Mainland China and Taiwan (Qiu, Ni and Meng, 2008; Sui & Wang, 2014b, p. 14; Wang, 2000; Yan & Zhang, 2015; Yang, 2006, pp.10-11; Yang, 2008, p. 28; Zhang, 2009b).

Firstly, there are not a variety of collaborative activities and the areas of collaboration in LIS education between Mainland China and Taiwan are not enough broad (Sui & Wang, 2014b, p. 14; Zhang, 2009b). Secondly, there are not many collaborative curriculum development activities among the cross-strait departments and schools. Thirdly, the literature survey indicates that there are not many joint publications of books and journal articles (Yan & Zhang, 2015). Fourthly, there are not many collaborative activities among faculty members in the cross-strait schools in terms of teaching and supervision. Fifthly, there are not many student exchanges in the cross-strait schools. Sixthly, there are many joint teaching activities such as joint teaching portfolio assessment in the cross-strait schools (Wang, 2000, p. 7). Finally, there is little research on the future sustainability of the cross-strait schools (Yan & Zhang, 2015).

STRATEGIES, SUGGESTIONS AND RECOMMENDATIONS

Contemporary society has entered a digital era. To solve the problems in the LISE collaboration among the cross-strait schools, it is recommended that LIS schools strengthen future collaborations in all aspects so as to "keep abreast with the latest technological developments and teaching methods, and ensure that their services are tailored to the rapidly changing demands of users" (Al-suqri, 2010, p. 51). "Without collaboration with others in their profession, LIS departments are unlikely to be able to keep up with these developments and deliver international standards of teaching, research and information services" (Al-suqri, 2010, p. 51).

According to Ma and Mak (2011, p. 348), "the association can play a more active role by collaborating more closely with regional associations and societies". The cross-strait associations played an important role "in the production of high quality LIS professionals" for the past decades and must be still strengthened in the future to act as a vehicle for the LISE developments of collaborative activities and mechanisms in Mainland China and Taiwan (Abioye, 2013; Al-suqri, 2010, p. 52).

A latest and comprehensive portal for the cross-strait LISE departments and schools is needed to be developed jointly by the educational organizations so that the completed portal

will be "a very important repository of information, gateway to learning and teaching resources", and "an invaluable platform to discuss and deliberate current and emerging issues, and sharing of best practices" (Foo, et al., 2006).

In order to provide high quality joint research, more research institutions and centers need to be jointly established in the cross-strait schools, and more joint research symposiums and seminars should be held in the future so as to promote and share the cross-strait collaborative research (Zhang, 2009b). For the sake of the improvement of teaching quality in the future, innovative joint faculty exchanges between the cross-strait schools need continuously to be supported and the joint faculty combine to teach some courses of information studies (Zhang, 2009b).

In the global age, it is necessary for the cross-strait LIS schools to develop more types of linkages and to develop more effective initiatives such as "hosting and participating in workshops, symposiums and conferences; implementing a portal for education; developing a repository of learning objects and resources; assuring quality through accreditation; and promoting and sustaining research and scholarship" so as to help further improve and ensure high standards of LIS education and research in Mainland China and Taiwan (Foo, et al., 2006). The parent institutions of the cross-strait LIS schools as well as the governments need to provide more financial supports for future collaborative initiatives.

CONCLUSION

What is the historical and current status of LISE in Mainland China and Taiwan? What are the LISE similarities and differences between Mainland China and Taiwan? What are the definition of collaboration, its importance and benefits and collaboration forms and challenges? What are the main collaborative activities? What are the main problems, strategies and suggestions and recommendations? This study concentrates on the brief responses to these questions.

Due to historical reasons, LISE in Mainland China and Taiwan has experienced different stages of developments. With the establishment of the People's Republic of China in 1949 and the rapid developments of all types of libraries, the library science education and its curricula had steadily developed until 1965 and were stagnated during the period of the Cultural Revolution from 1966-1976. Since the reform and opening to the outside world in 1978, LISE in Mainland China has developed at a rapid and steady speed. In comparison with the library science education in Mainland China, there was no library science program in Taiwan before 1949. Since the first library science program in Taiwan established in 1955, LISE in Taiwan has been steadily developed.

The cross-strait LISE has made great progress in collaborations for the past decades and a solid foundation for the cross-strait LISE collaborations has been laid. Nowadays, the cross-strait economies are working more closely and exchanges among people are increasing.

In order to better grasp the opportunities for development of library and information science education, the cross-strait LIS schools need to further promote cross-strait collaboration in the more diverse forms, including more staff and students' collaborative interactions and engagements, collaborative teaching and research, graduate training collaboration, collaboration in the preparation of textbooks, the establishment of cross-strait academic community with conferences, seminars, forums, workshops and accreditation mechanism, and jointly established research institutions and centers in order to keep up with the international standards and to promote the common progress in the future. Today, the cross-strait educators and scholars "have a responsibility to promote the cross-strait LISE exchange and collaboration in greater depth and work together to create a better future for library and information science education" (Sui and Wang, 2014a, p. 80).

This study would be useful for people to better understand the collaboration in library and information science education between Mainland China and Taiwan, and for the cross-strait LIS schools to improve the LISE collaboration in the future. The key limitation is that this study is solely focused on the literature survey. Future research will focus on an empirical study of the collaborative views of the heads of the cross-strait schools, faculty and students via interviews and online surveys.

REFERENCES

Abioye, A. (2013). *Enhancing library and information science education through cross-border collaboration: The experience of university of Ibadan, Nigeria and University of Ghana.* Retrieved 29 June 2016 from http://creativecommons.org/licenses/by/3.0/

Al-Suqri, M. N. (2010). Collaboration in library and information science education in the Gulf Co-operation Council (GCC): Current status, challenges and future trends. *Emporia State Research Studies, 4b*(2), 48-53.

Cheng, H. (1994). Glory and dream: A looking back at Chinese librarianship in the twentieth century. *Library, 3*, 18-24.

Cheng, H. (2001). The effect of the Cold War on librarianship in China. *Libraries & Culture, 36*(1), 40-50.

Commonwealth of Australia. (2004). *Review of closer collaboration between universities and major publicly funded research agencies*. Retrieved 23 July 2016 from http://www.dest.gov.au/collaboration/ documents/pub.pdf.

Ecosystem Management Initiative. (2002). *Collaboration*. Retrieved 23 July 2016 from http://www.snre.umich.edu/ ecomgt/collaboration/definitions.htm.

Foo, S., Khoo, C., Chaudhry, A., & Majid, S. (2006). Working together in developing library and information science education in the Asia Pacific. *Proceedings of the 9th International Conference of Asian Digital Libraries* (ICADL2006), Tokyo, Japan, November 27-30, Lecture Notes in Computer Science (LNCS), 4-11.

Lin, C. (2004). *Library and information science (LIS) education in Taiwan: The development, current situation, and future perspectives*. Retrieved 16 July 2016 from http://www.jslis.jp/liper/record/taiwan-e.pdf

Lin, S. (1985). Historical development of library education in China. *The Journal of Library History (1974-1987), 20*(4), 368-386.

Lu, S. (1997). The undergraduate program of library and information science education in Taiwan, ROC, and its subject specialization requirement. *Journal of Library and Information Studies, 23*, 1-8.

Ma, L., & Mak, V. (2011). Internationalization and collaboration: The case of the Hong Kong Library Association. *Proceedings of Asia-Pacific Conference Library & Information Education & Practice*, Putrajaya, Malaysia, June 22-24.

Ocholla, D. N. (2008). The current status and challenges of collaboration in library and information studies (LIS) education and training in Africa. *New Library World, 109*(9/10), 466-479.

Qiu, J., Ni, C., & Meng, Y. (2008). Comparative analysis on the status quo of library and information science. *Document, Information & Knowledge, 126*(6), 10-16.

Peking University. (2016). *Courses for undergraduate students: Library science*. Retrieved 13 July 2016 from http://www.gotopku.cn/school.main.htm

Sacchanand, C. (2012). *Building collaboration between library and information science education and practitioners in Thailand: Transcending barriers, creating opportunities*. Retrieved 29 June 2016 from http://conference.ifla.org/ifla 78/213- Sacchanard-en.pdf

Sui, X., & Wang, N. (2014a). Study of the development of library science between both sides of Taiwan straits. *Journal of intelligence, 33*(2), 75-80.

Sui, X., & Wang, N. (2014b). Research on the development of library science between Mainland China and Taiwan. *Library Development, 1*, 10-14.

Tan, X. (1997). The development stages and implications of libraries in Taiwan. *Library Tribune, 4*, 29-37.

Tan, X. (2010). Exchanges and cooperation in libraries on both sides of the Taiwan Straits. *Academic Library Work, 30*(135), 8-12.

Wang, M. (2011). Historical progress and future trends of library and information science master's degree education in Taiwan. *International Symposium on Library and Information Science Education: Trends and Visions Invited Paper*. Retrieved 23 July 2016 from file:///G:/AsianPaConference(China)Nov2016/Wang%20Meiling%20paper.pdf

Wang, Z. (2000). The retrospect and prospect of 10 years exchanges and cooperation in libraries on both sides of the Taiwan Straits. *Library Work & Research, 3*, 1-10.

Wu, C., & Fu, Z. (2013). Creating a new era for the cross-strait library and information science education and cause of libraries: The 2012 summary of the 11th Cross-strait

Conference on Library and Information Science Education. *Journal of Academic Library and Information Science, 135*(1), 84-93.

Wu, G., & Zheng, L. (1997). *Education for librarianship in China.* London: Mansell.

Yan, B., & Zhang, T. (2015). The retrospect, present situation and prospect of the research of library and information science in Taiwan: Based on the content analysis of theses and dissertations. *Journal of Library Science in China, 41*(218), 083-095.

Yang, M. (2004). Reflections on library and information science education in Taiwan. *Journal of Library and Information Science, 30*(2), 46-58.

Yang, M. (2006). *Challenges & opportunities: Retrospect and prospect of the library development in Taiwan.* Retrieved 18 July 2016 from http://nccur.lib.nccu.edu.tw/bitstream/140.119/21903/1/192_200606

Yang, M. (2008). The curriculum and teaching strategies of library and information science in the area of Taiwan. *Document, Information & Knowledge, 125*(5), 28-33.

Yi, Z. (2013). *History of library developments in China.* Retrieved 18 July 2016 from http://library.ifla.org/143/1/164-yi-en.pdf

Yi, Z. (2014, August). *History of curriculum development in library science education in China.* Paper presented at the 80th IFLA World Library and Information Congress, History of Librarianship Conference, Lyon, France.

Yi, Z., & Thompson, K. (2015). A case study of collaboration in the building of China's library and information infrastructure. *Information & Culture: A Journal of History, 50*(1), 51-69.

Zhan, D. (2001). Eighty-year reflections – from the Department of Library Science in Boone University to the School of Information Management at Wuhan University. *Library Work in Colleges and Universities, 4*, 35-41.

Zhang, Z. (2009a). 30 years of exchanges and cooperation among libraries across the Taiwan Straits. *Journal of Library Science in China, 35*(181), 079-084, 106.

Zhang, Z. (2009b). Review of the communication and cooperation between the cross straits library and information science department. *Document, Information & Knowledge, 2*(128), 105-109.

Zhao, J. (2010). *A comparative study of library science education between Mainland China and Taiwan.* Unpublished thesis for Master of Information Management, Liaoning Normal University, China.