Cite this paper as: Asadi, S., Jamali, H.R., & Mansourian, Y. (2015). LIS Curriculum Changes in Accordance with Scientific Development in Iran: A General Perspective, paper presented at *the 6th International Conference on Asia-Pacific Library and Information Science Education and Practice,* 28-30 October 2015, Manila, Philippines, pp. 84-90.

Conference website: http://www.a-liep.com

PROCEEDINGS OF THE 6th INTERNATIONAL CONFERENCE ON ASIA-PACIFIC LIBRARY AND INFORMATION EDUCATION AND PRACTICE

ASIA-PACIFIC LIS: EXPLORING UNITY AMID DIVERSITY

Philippine Interantional Convention Center
MANILA, PHILIPPINES
OCTOBER 28-30, 2015

LIS CURRICULUM CHANGES IN ACCORDANCE WITH SCIENTIFIC DEVELOPMENT IN IRAN: A GENERAL PERSPECTIVE

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Abstract

Library and information science (LIS) education has been through dramatic quantitative and qualitative changes during last two decades due to massive cultural-scientific movement in Iran. Iran, as a developing country, has adopted a national plan for scientific development in order to reach the top of Middle East region by 2025 and Iranian libraries and information centers as well as LIS departments in major universities are now working on new areas such as scientometrics, human information interaction and research policy. This paper outlines the major shifts in teaching LIS in Iran and focuses on the changes in the titles and the contents of LIS courses and curricula in Iranian universities. The results show that the educational theme in LIS courses has changed from classic library tasks to technology, innovation and science policy in order to support the national scientific development plans.

Keywords: LIS teaching; higher education; curriculum; Iran; scientific development

Introduction

Located in southwestern Asia, Iran is considered as one of the major Middle Eastern developing countries. There has been an emphasis on science and technology in all development plans and Iran's relative share in global scientific output increased from 0.0003% in 1970 to 0.29% in 2003 (Moein, Mahmoudi, & Rezaei, 2005). This share increased to 0.44% in 2012 (Van Noorden, 2012) and is still growing although at a

slightly slower pace. Since 1999, Iran has surpassed competitive countries such as South Africa, Pakistan and Malaysia (UNESCO Science Report, 2010) and later Israel and Turkey in number of international scientific publications.

Socio-cultural movements during *reformation period* (1997-2005) led to substantial changes in higher education as well as science and research policy. Iranian Science Roadmap is the highest documentation for directing Iranian research and scientific activities (Goodarzi & Ghazinoori, 2013). The Roadmap sets the research priorities and establishes measures and target points for monitoring scientific development. For instance, it is expected that the country becomes the first state in the Middle East in terms of scientific output and impact by 2025. As a result of all the emphasis on science, research and higher education, Iranian higher education system has grown rapidly in many aspects including the number of enrolled students, the ratio of female to male students, diversity and comprehensiveness of programs and disciplines, and revising the curricula of programs.

According to the nature of the national scientific plans and roadmaps, some academic fields in Iran have received more attention to assist science policy making. The library and information science (LIS) community is one of these fields which now plays a considerable role in observation, measurement and visualization of the scientific growth of Iran. Besides the increase in the number of the LIS departments across the country, the curriculum of LIS has been updated and diversified. In the past there was only one program named as 'Library and Information Science'. However, now there are quite a number of specializations within the discipline and students can study in postgraduate degrees in areas such as academic library management, archive, scientometrics, information management, information retrieval and so on. LIS curricula have been modified for improving the skills and knowledge of LIS graduates in order to participate in national science and higher education centers.

Iranian LIS education started in Iran in 1960s and was developed with the collaboration of American lecturers during 1970s (Hayati & Fattahi, 2005). Although the educated librarians have promoted the quality of service in the academic, public and special libraries throughout the country, Iranian LIS education still suffers from some problems, also common in some other developing countries; problems such as lack of accreditation, lack of academic independence, lack of flexibility in educational system, lack of collaboration among faculty members and so on (Alimohammadi & Jamali, 2011).

This study focuses on changes in the title and content of courses and curricula in LIS departments in Iranian universities and tries to reveal the professional shifts in LIS education in Iran in response to the national scientific development. The key question this paper seeks to answer is what changes have appeared in Iranian LIS programs and curricula in the recent years and how these changes are related to the social demands for LIS profession services and skills?

Methodology

This research looks at the changes in courses offered by LIS departments in Iran. We used a simple content analysis method to answer our research question. To gather the data, the old and new curricula were analyzed in B.A., M.A. and PhD levels. As mentioned before The Iranian Ministry of Science, Research and Technology (MSRT) is in charge of providing and enforcing new academic programs and related course titles. For B.A. program, course details and curricula of 2009 and 2015 were selected as old and new curricula respectively. In M.A. level, 1996 and 2012 and for PhD, the 1994 and 2015 curricula were selected in the same way. The courses are officially categorized as general, basic and specialized titles. General courses (such as Islamic theology, Persian literature, General English and so on) are common in all B.A. disciplines in Iranian universities and therefore were excluded in our study. A more detailed categorization of topics was established in order to understand what changes have occurred during

curriculum revision. As a result, the courses were classified as general LIS, collection and organization, users etc.

Findings

Table 1 compares the titles of courses in 2009 and 2015 B.A. curricula. Seven categories i.e. LIS general, Resources and Organization, Reference, Users and Society, Information Science, IT & Computing and miscellaneous (Etc.) are considered as *major* topics the courses belong to. According to the table, some courses from the old curriculum have been eliminated in the new program (marked as ~~*abc*~~ in the table). For some other courses, title and content have been changed and updated (marked as ±) and the remaining courses are identical in both curricula. Most courses are obligatory while a smaller fraction of them are optional (marked as ✓) and students are free to choose what they prefer. The table indicates elimination of several courses in the new B.A. program, most of them related to literature and publishing. Courses such as linguistics, literature, public relations and editing and publishing are now replaced with new titles such as multimedia systems, computer programing and management information systems (MIS). There are a number of courses which have been revised in new program in their titles, content, and number of credits. New titles are not shown in the table in order to compare two programs more carefully.

Table 1

Courses in Old and New B.A Curricula

Major	**Old**	**New**
LIS general	- LIS Principles - Organization and Management - Library Building and Equipment - Scientometrics	- LIS Principles ± - Organization and Management ± - Library Building and Equipment - Scientometrics
Resources and Organization	- Collection Management - Cataloguing and Classification - Indexing and Abstracting - Book Indexing - Periodicals - Archives✓ - Manuscripts ✓	- Collection Management - Cataloguing and Classification - Indexing and Abstracting ~~- *Book Indexing*~~ - Periodicals - Archives - Manuscripts ✓
Reference	- Reference Services - Reference Books - Islamic Reference Books✓	- Reference Services - Reference Books - Islamic Reference Books✓
Users and Society	- Social Psychology - Sociology - History of Civilization - History of Science - Children Librarianship - New Literate Services✓ - Extra-Library Services✓ - Reading Sociology✓ - Public Library and Development✓ - Media and Press	- Social Psychology ~~- *Sociology*~~ ~~- *History of Civilization*~~ - History of Science - Children Librarianship - New Literate Services✓ - Extra-Library Services ± - Reading Sociology✓ - Public Library and Development✓ - Media and Press - Printing and Publishing Industry - Social Information Services ✓ - Information Flow in Organizations✓

Major	Old	New
		- Knowledge and Information for Development✓
Information Science	- Information Storage and Retrieval - Communication Science - Knowledge Management - Sustainable Development - Information Literacy	~~- *Information storage and retrieval*~~ - Communication Science ± - Knowledge Management ~~- *Sustainable Development*~~ - Information Literacy - Information Marketing
IT & Computing	- Computer Science - Word Processing - ICT - Library Computer Systems - Computer-Assisted Cataloging - Full-text and Abstract Databases - Library Website	~~- *Computer Science*~~ - Word Processing ~~- *ICT*~~ - Library Computer Systems ± - Computer-Assisted Cataloging - Full-text and Abstract Databases ± - Library Website - Data Structure - Network and Hardware - Software and OS - Natural language processing - Web Technology - Database - Multimedia Systems - Digital Library Design - Computer Programming - Computer Lab. - MIS
Etc.	- Statistics✓ - English - Literature - Linguistics - Public Relations - Editing and Publishing - Writing Styles - Professional Ethics - Training	- Statistics ± - English ~~- *Literature*~~ ~~- *Linguistics*~~ ~~- *Public Relations*~~ ~~- *Editing and Publishing*~~ - Writing Skills and Styles ± - Professional Ethics - Training - Research Methodology - Applied Mathematics ✓

Note: ± change in title✓ optional course ~~*abc*~~ eliminated in new program

Table 2 summarizes the details of the old and new LIS programs in M.A. level. The two curricula here as well as in Table 4 for PhD programs, are categorized in seven classes as it was practiced for B.A. curricula, in order to make possible the comparison of the courses and majors in three different levels of study. As it can be seen in Table 3, M.A. students study in different field with considerable changes in new program. Courses such as periodicals, archival management and indexing and abstracting are not taught anymore in postgraduate levels and new titles such as database architecture and information marketing are emerging. M.A. students still have to study research methodology and statistics as well as attend training sessions in libraries similar to previous program. It should be noted that M.A. courses mentioned here are extracted from the subfield of information management. LIS students in M.A. level have choices to be graduated in different subfields such as scientometrics, academic LIS, encyclopedia studies and archival studies.

Table 2

Courses in the Old and New M.A Curricula

Major	**Old**	**New**
LIS General	- LIS principles - Organization and Management✓ - National and International Information Centers✓	- LIS principles ± ~~*- Organization and Management*~~ ~~*- National and International Information Centers*~~ - Library and Information Services Evaluation
Resources and Organization	- Archival Management✓ - Periodicals✓	~~*- Archival Management*~~ ~~*- Periodicals*~~ - Information Resources Management✓ - Documents Management ✓
Reference	- Reference Services✓ - Special Reference Materials	~~*- Reference Services*~~ - ~~*Special Reference Materials*~~
Users and Society	-	- Libraries and Information Society - Special Information Services ✓
Information Science	- Information Storage and Retrieval - Indexing and Abstracting	- Information Storage and Retrieval ~~*- Indexing and Abstracting*~~ - Information Representation - Economics of Information ✓ - Organizational Knowledge Management - Information Marketing✓
IT & Computing	- IT and Information Systems - Data processing	~~*- IT and Information Systems*~~ ~~*- Data processing*~~ - Management Information Systems - Database Architecture - Data Mining ✓
Etc.	- Research Methodology - Statistics✓ - Individual Study on LIS✓ - Training - Thesis	- Research Methodology - Statistics ~~*- Individual Study on LIS*~~ - Training - Thesis

Note: ±change in title ✓ optional course ~~*abc*~~ eliminated in new program

Some LIS departments offer PhD programs which according to the new curriculum is taught in two major subfields i.e. information retrieval and information management. This program was recently accepted and announced by MSRT to be replaced with the previous one which was practiced for two decades.

Table 3 compares the courses in the old and new PhD curricula. As it can be seen in the table, new PhD curriculum offers more courses in knowledge management and information technology. Some courses such as research methodology and statistics have been revised and renamed to fulfill the new changes and progresses in the field of information science.

Table 3

Courses in the Old and New PhD Curricula

Major	Old	New
LIS General	- Library and Information Services Planning - International LIS - Special Issues in LIS	~~- *Library and Information Services Planning*~~ ~~- *International LIS*~~ ~~- *Special Issues in LIS*~~ - Knowledge and Information Theory
Resources and Organization	-	- Knowledge Audit and Organization
Reference	-	-
Users and Society	- Geopolitics	~~- *Geopolitics*~~ - Knowledge Acquirement and Extraction - Philosophy of Science✓
Information science	- Communications and Cybernetics - Information Management - Economics of Information - Information Needs and Behavior - Information Science Selective Topics	- Communications and Cybernetics - Information Management ±✓ - Economics of Information ±✓ - Information Needs and Behavior ±✓ - Information Science Selective Topics ±✓ - Knowledge-Based Solutions - Information Retrieval Systems Evaluation✓ - Knowledge Management Systems and Technology✓
IT & Computing	- Information Retrieval Systems - Database Management	~~- *Information Retrieval Systems*~~ ~~- *Database Management*~~ - Knowledge Mapping
Etc.	- Research Methodology - Teaching - Thesis	- Research Methodology✓ ~~- *Teaching*~~ - Thesis - Statistics✓

Note: ±change in title ✓ optional course ~~*abc*~~ eliminated in new program

Discussion and Conclusions

The national scientific development plan in Iran has stimulated the country's higher education to be more innovative and productive and move to new fields of study and research. For example, new academic programs in nanotechnology have been launched in order to support the massive scientific and industrial investments on the related fields. Another characteristic of this national scientific movement is its emphasis and counting on several fields such as science policy, future studies, strategic management and library and information science to observe and direct the science, innovation and technology achievements.

To fulfil the government programs and industry's expectations, LIS education has grown quickly in Iranian universities and the title, contents and nature of LIS courses have been revised in order to adapt to society's scientific movement. This study focused on the comparison of courses in old and new curricula in LIS departments in Iran. LIS education now covers more IT-related courses and focuses more on the skills that librarians need to be able to work in the digital environment. The LIS education in Iran has become much

diversified, specialized and IT-oriented. Scientometrics, knowledge management and information economy and marketing are among the emerging topics in LIS education in Iran. At postgraduate level, students can choose from several new programs. Both undergraduate and postgraduate courses now include many more modules related to information technology so the graduates can involve in a broad spectrum of duties such as system librarian, Web librarian, information analyst, scientometrics specialist and so on.

The describe changes in LIS courses create both opportunities and challenges. On one hand, students have the opportunity to learn state of the art knowledge and skills to be able to work in different roles. However, the challenge is that in Iran LIS departments do not have enough number of faculty member from IT related disciplines qualified for teaching in such fields. The students who enroll in LIS courses in Iran normally have humanities background and even at postgraduate level, the majority of students have a bachelor degree either in LIS or in a social science or humanities subject. All these mean that LIS departments are not perfectly equipped with the right faculty members to teach the new IT-oriented modules. When they invite lecturers from other departments such as computer science to teach those modules, another problem appears. Those lecturers are not familiar with the approach of LIS to IT and therefore are not perfectly capable of teaching what they are supposed to teach. Moreover, since students who do not have the appropriate background, they find it difficult to understand and learn those modules. All of these challenges make the LIS education in Iran somehow ineffective to a certain extent, especially in IT-oriented areas. The other challenge that LIS education in Iran is facing at the moment is that the job market is mainly government-dominated and few posts are available in the private and industry sectors for LIS graduates. Most of the newly developed courses and programs do not have an appropriate level of demand in the job market and therefore, the graduates find it frustrating while they are seeking for a suitable job.

In summary, LIS education in Iran has developed considerably in many aspects during recent years. However, this is still growing in terms of subfields, new programs and course details. The country's national demand for policy making and observation of science and technology development has opened new doors to the researchers and graduates of LIS departments and more emphasis is now put on training information scientist and professionals educated and experienced in a wider range of activities rather than those learned and practiced in previous decades. The experiences of LIS education in Iran may be an example for other developing countries which intend to go through a science development plan and need information professionals with new skills.

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