

# Balancing Rigor and Relevance and Translating Knowledge to Capability: The Practice of School of Information Management of Wuhan University

## Abstract

Library and Information Science (LIS) educators have recognized two critical issues to be well addressed in the LIS education: the relevance of LIS education to practice and the efficiency of knowledge – capability translation. To solve these two problems, School of Information Management (SIM) of Wuhan University (WHU) has enacted a series of strategies to reform and reconstruct the curricula system by balancing rigor and relevance and facilitating the translation from knowledge to capability. Specifically, employing a specialty quality chain – specialty course chain mapping approach, SIM of WHU set up the courses to fulfill the requirements of the different types of quality or capability. The achievement that the graduates obtain in the recent years confirm the effectiveness of the approach.

**Keywords:** LIS education; curriculum design; specialty quality chain; specialty course chain.

## 1 Introduction

To achieve the vision of iSchool which aims to make the information field be “widely recognized for creating innovative systems and designing information solutions that benefit individuals, organizations, and society,”<sup>1</sup> iSchool members shoulder the responsibility to cultivate the students with both the theoretical knowledge about the information-related underlying mechanisms and the practical capability to apply the learned knowledge to the information-related professional tasks. However, past LIS education may not accomplish this mission well. Two critical issues have been frequently raised. First, LIS education may focus more on the theoretical knowledge which is not so easily applied in the LIS practice. On the one hand, without considering the contextual details of LIS practice environment, LIS research seems too abstract and with few pragmatic value. On the other hand, the new progress of LIS practice may be not reflected in the LIS education, inducing that LIS education lags behind LIS practice. Second, the information-related knowledge may be not well translated into students’ capability or literacy. This is jointly caused by the inappropriate evaluation mechanism which stresses on the exam scores and the wrong learning orientation that aims to learn what is taught rather than to learn what one really needs. These two problems in LIS education hinders the communication between practice and research and the students’ capability-building. Thus, to address these issues, School of Information Management (SIM) of Wuhan University (WHU) enacted a series strategies to reform and reconstruct the curricula system and the two core concepts of the reform can be interpreted as the rigor – relevance balanced design principle and the specialty quality chain – specialty course chain mapping approach. We will explain these two concepts in detail in the following sections.

## 2 Rigor – Relevance Balanced Curriculum Design Principle

To solve the first problem about the relationship between LIS education and practice, SIM of WHU proposes a rigor – relevance balanced curriculum design principle based on the design science paradigm (Hevner et al. 2004). Design science paradigm is originated from the field of engineering which has a problem-solving orientation. The key idea of design science is to create an artifact which has a strong knowledge base and can be applied in the environment or practice. LIS curriculum can be regarded such an artifact, so its design process can follow the design science paradigm (see Figure 1).

LIS curriculum design should consider both the knowledge base and the environment. The knowledge base provides the raw materials from and through which LIS curriculum is accomplished. It consists of two components: foundations and methodologies. The foundations cover all specific domain knowledge relevant to information management such as theories, frameworks, instruments, constructs, models, instantiations through the whole information processing process including information organization, retrieval, architecture, and seeking. The methodologies refer to those guidelines or techniques used to justify and evaluate the validity of the foundations. Both foundations and methodologies provide applicable knowledge to LIS curriculum design and can be transformed to specific LIS courses. Appropriate application of existing foundations and methodologies can help ensure the rigor of LIS curriculum.

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<sup>1</sup> Source: <http://ischools.org/>

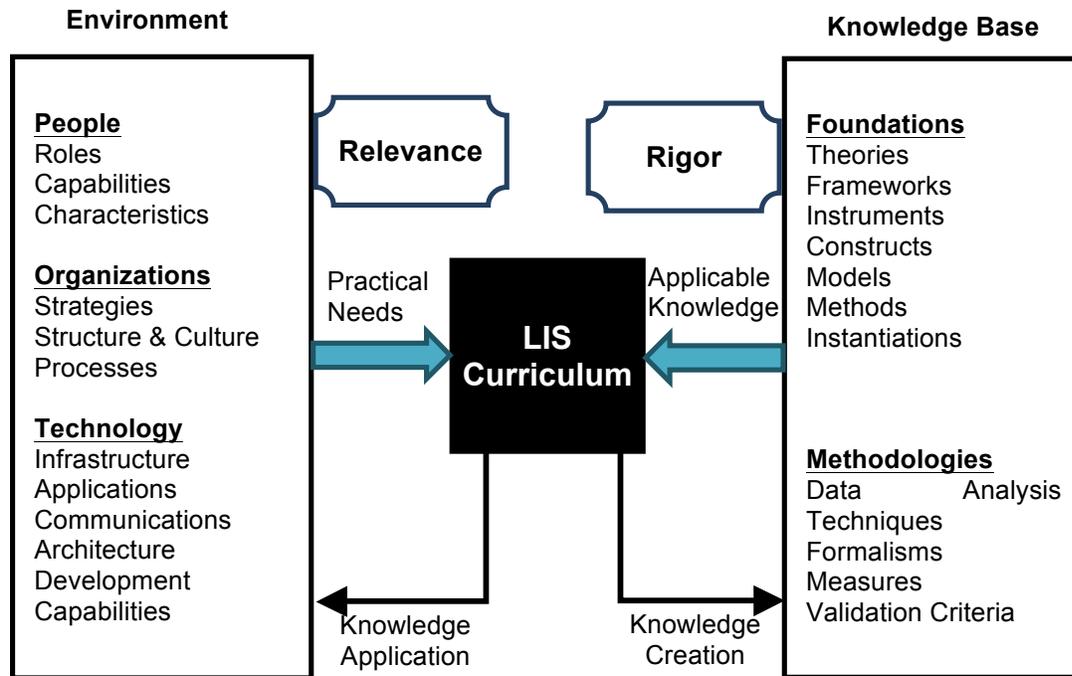


Figure 1. A Rigor – Relevance Balanced Curriculum Design Principle (Adapted from Hevner et al. (2004))

The environment captures the practical field that LIS knowledge can be applied. Specifically, environment is associated with people, organizations, and technology. The roles, capabilities, and characteristics of the LIS professionals who engage in front-line LIS practice (i.e., people), the strategies, structure, culture, and processes of LIS organizations, the infrastructure, applications, communication architecture, and development capabilities of LIS technology jointly provide practical needs of LIS education. Thus, LIS curriculum designers should consider these practical needs and try to match the practical needs and the LIS courses.

Another important point of the design science paradigm relies on the co-evolution of knowledge base, environment and LIS curriculum. On the one hand, knowledge base and environment provide applicable knowledge and practical needs which can shape the LIS curriculum design. On the other hand, LIS education and research activities further create new knowledge to enlarge existing knowledge base and enhance LIS practice by applying new knowledge. The co-evolutionary relationship calls for the dynamic adjustment of LIS curriculum. The co-evolutionary relationship also sheds light on how LIS education can promote theoretical and practical advance.

Based on the design science paradigm, SIM of WHU follows the rigor – relevance balanced curriculum design, targeting to cultivate students with both theoretical knowledge and practical capabilities. Adapting to the change of external environment (e.g., the emergence of big data and cloud computing technologies), SIM of WHU adjusted the curriculum accordingly.

### 3 Specialty Quality Chain – Specialty Course Chain Mapping Approach

The rigor – relevance principle offers a strategic blueprint of LIS curriculum design. At the operational level, SIM of WHU employs a specialty quality chain – specialty course chain mapping approach (see Figure 2). The specialty quality chain captures the capabilities required in the LIS practice while the specialty course chain reflects the courses including in the LIS curriculum. Based on the rigor – relevance principle, LIS courses should meet the practical needs and finally be translated to students' capability, suggesting a mapping relationship between specialty quality chain and specialty course chain. The specialty quality chain – specialty course chain mapping approach takes students' capabilities as the final teaching target and setting courses to build these capabilities. The quality- or capability-driven curriculum design well fill the gap between knowledge and capability, solving the second problem proposed in the

introduction section.

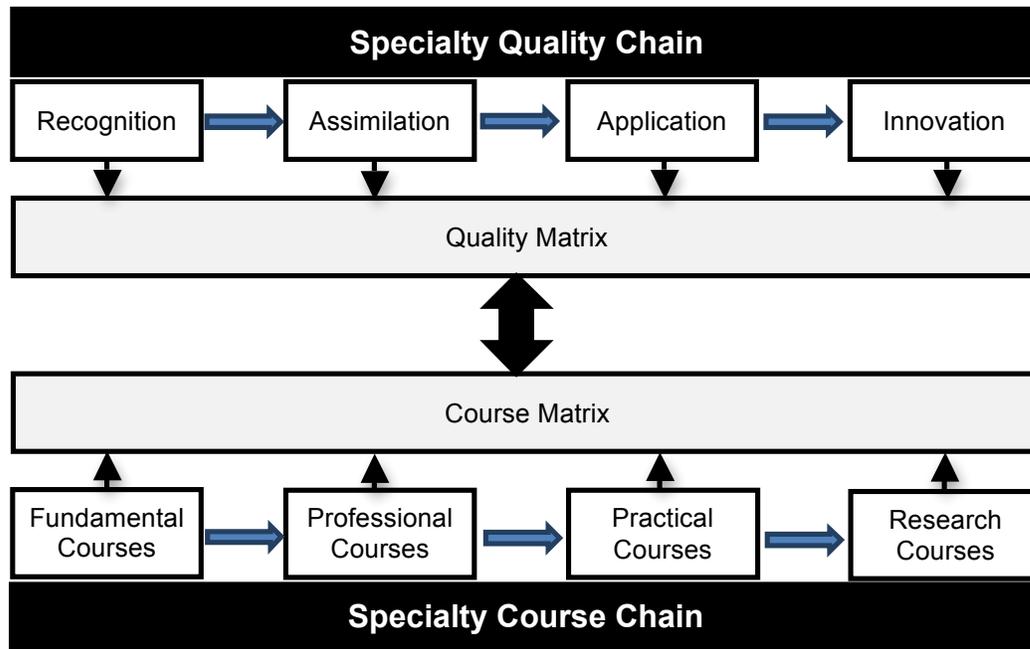


Figure 2. A Specialty Course Chain – Specialty Quality Chain Mapping Design Approach (Adapted from Ma and Song (2014))

Specifically, according to the extent to which students can proficiently master the knowledge, specialty quality can be classified into four types: recognition, assimilation, application, and innovation (Ma and Song 2014). Recognition quality, as the baseline quality, requires the students to master the “know-what” knowledge, while assimilation quality asks for the students to master the “know-how” and “know-why” knowledge. Application quality reflects the capability to apply the knowledge into practice by integrating the contextual details of practice and the learned knowledge. Innovation quality requires the students to challenge prior knowledge and create new knowledge. These four types of quality can be further decomposed into more sub-categories of quality which can be interpreted as a quality matrix.

The specialty course chain also include four types of courses: fundamental courses, professional courses, practical courses, and research courses. Fundamental courses cover the courses which are regarded as the foundations of the other courses and have a broad generalizability. Professional courses refer to those courses can be applied to certain specific domains such as information organization and information retrieval. Practical courses ask for the students to apply the learned knowledge to the practice, while research courses requires the students to propose new ideas and insights by appropriately applying the theories and methodologies.

Table 1 shows the key courses in the curriculum of SIM of WHU. The fundamental courses include Principles of Management, Principles of Economics, and Fundamentals of Information Management, which are helpful to shape the quality of recognition and assimilation. The professional courses include Information Organization, Information Architecture, Information Retrieval, Information Resource Development, Information Analysis and Forecasting, Information Services and Users, Information Systems, and Data Mining and Data Structure, which are corresponding to the quality of assimilation and application. The practical courses include social practice and internship program in LIS organizations, while the research courses include research methodology, research projects, and academic activities organized by undergraduate academic society. Both practical courses and research courses can help to enhance students’ application quality and innovation quality.

		Quality Matrix				
		RE	AS	AP	IN	
Course Matrix	Fundamental Courses	Principles of Management	√	√		
		Principles of Economics	√	√		
		Fundamentals of Information Management	√	√		
	Professional Courses	Information Organization		√	√	
		Information Architecture		√	√	
		Information Retrieval		√	√	
		Information Resource Development		√	√	
		Information Analysis and Forecasting		√	√	
		Information Services and Users		√	√	
		Information Systems		√	√	
		Data Mining and Data Structure		√	√	
		Social Practice (Course Design)			√	√
	Practical Courses	Social Practice (Summer Vacation)			√	√
		Internship Program (Organization)			√	√
		Social Investigation and Statistical Analysis			√	√
Research Courses	Undergraduate Research Projects			√	√	
	Undergraduate Academic Society			√	√	

Table 1. The Mapping Relationship between Course Matrix and Quality Matrix

Note: RE = Recognition, AS = Assimilation, AP = Application, IN = Innovation.

#### 4 Effectiveness Evaluation

The application of the specialty quality chain – specialty course chain mapping approach in the recent years has achieved significant impacts on LIS students' capability building. In 2015, four research projects taken over by undergraduates were supported by the National College Students Innovation and Entrepreneurship Training Program. One project obtained the first prize of the fourteenth "Challenge Cup" National University Student Extracurricular Academic Science and Technology Work Competition. The research papers written by undergraduates were presented on the international academic conferences such as Pacific Asia Conference on Information Systems, International Conference on Electronic Business, and certain research papers were published by SSCI-indexed journals such as Internet Research, Electronic Library, and Library Hi Tech.

The Information Literacy Association of Wuhan University, which is independently founded by students of SIM of WHU, is the first student academic society on information literacy. In 2016, the association successfully held the tenth National University Information Search Contest. The contest is supported by Baidu whose search engine services are most used in China.

#### 5 Conclusion

To facilitate the communication between LIS education and practice and the translation from knowledge to capability, SIM of WHU based on the rigor – relevance balanced principle creates a specialty quality chain – specialty course chain mapping approach of LIS curriculum design. The significant achievement obtained through the reform and reconstruction of the LIS curriculum confirms the validity of this

approach. This approach can be applied and further improved by other iSchool members.

## 6 References

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