Development of Characteristic Application Talents in Information Management and Information System
—Taking the Research of Shanxi University of Finance and Economics as an Example

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Abstract—By analyzing the new requirements for the professionals of information management and information system in the new era environment, combined with Shanxi University of Finance and Economics’ mission, professional advantages, and subject characteristics, and referring to the talent development programs of some financial and economic institutions in China, the characteristics of the professional talent development program of information management and information system were studied, the reform ideas were put forward, and the corresponding curriculum system was constructed to cultivate the applied talents with the characteristics of the colleges.

Keyword—Information Management and Information System; Features; Finance.

I. BACKGROUND OF THE STUDY

A. Macro Background

With President Xi Jinping’s theory of “the new era of socialism with Chinese characteristics”, China's higher education personnel development is also facing new thinking and new challenges. How to cultivate high-quality professionals who meet the requirements of China's socialist characteristics in the new era is a topic that every university must study.

The first priority of colleges and universities is talent development. On June 21, 2018, the party secretary and minister of China’s Ministry of Education, Chen Baosheng, issued the perspective of “talent development is the essential function of the university, undergraduate education is the root of the university” at the New National Higher Education Undergraduate Education Work Conference held in Chengdu. Combining the characteristics of the development of the new era, focusing on the research of undergraduate talent development, clarifying the direction of undergraduate talent development, has the meaning of direction guidance and realistic exploration. Studying the “new era professional development characteristics of information management and information system” is in line with the needs of the current situation and the Specific requirements of implying the Party Central Committee's new era of socialism with Chinese characteristics and the “higher school undergraduate teaching quality and teaching reform project”.

Recently, in the event of the selected case of the typical case selection campaign for education reform and innovation in China, the theme of “education reform” appeared the most frequently for 23 times, as shown in Fig.1. It can be seen that education reform has become a hot topic in Chinese universities.

![Fig. 1. The distribution map of China's education reform and innovation selected case of typical case selection activity](image)

B. School Background

According to the spirit of the National Standard for the Quality of Undergraduate Professional Teaching in the General Colleges and Universities issued by the Ministry of Education in 2018, combined with the problems encountered in the implementation of the undergraduate professional development
program before, facing the needs for the characteristics professional talents of information management and information in the new era of socialist construction with Chinese characteristics, we have carried out investigations and research on the issues of the general education curriculum, the general curriculum, the reasonable setting of the professional curriculum.

By investigating the undergraduate professional development program for information management and information systems in China's financial and economic institutions, the development trend of new technologies in the new era is clarified, and combined with the guiding ideology and basic principles of National Standard for Undergraduate Professional Teaching Quality in the General Colleges and Universities issued by China’s Ministry of Education, study and develop a set of characteristic development programs suitable for undergraduate talents in information management and information systems in the new era with the characteristics of Shanxi University of Finance and Economics.

II. CHARACTERISTICS OF ANALYSIS AND EMBODIMENT

Under the background of the new era, the information management and information system of Shanxi University of Finance and Economics should conform to the needs of the times and the needs of social development, apply new technologies and new theories to the curriculum, and construct a set of development programs that are distinctive and suitable for the school.

The characteristics of undergraduate talent development in information management and information system of Shanxi University of Finance and Economics are “financial + technology” and “theory + practice”, that is, in the process of talent cultivation, not only the study of management science, economic theory knowledge, but also grasp the basic theory of management and economics; it also emphasizes the practical ability of information technology, and the ability to solve practical problems with the help of information technology in the field of economic management.

A. The embodiment of “Finance + Technology”

Shanxi University of Finance and Economics is a financial and economics institution. The characteristics of “financial and economics” are mainly reflected in the advantages of courses in financial and economic institutions.

The “technical” feature is reflected in the cultivation of technical capabilities and the opening of relevant technical courses. In the development objectives, in addition to requiring students to master the methods and technologies of information system development and utilization, have certain practice and research capabilities of information system development and utilization, but also master the methods and techniques of data and information analysis, with certain data information analysis practices and research ability, in short, to meet the needs of information society for information analysis talents, cultivating technical talents for information system development and training data and information analysis talents are both desperately needed [2]. The specific embodiment of this feature in the curriculum system is to add a large class of compulsory courses to the curriculum statistics and econometrics of original data and information analysis, for instance, big data technology and application, professional elective courses, business intelligence, business intelligence experiments, information Analysis tools, information analysis tool experiments, data visualization and data analysis, information collection and analysis, and data analysis, etc.

B. The embodiment of “theory + practice”

It is necessary not only to pay attention to the study of theoretical knowledge, but also to emphasize the practical ability of information technology. After more than 30 years of teaching practice and experience in the information management and information system of Shanxi University of Finance and Economics, and the investigation of the undergraduate professional development of information management and information systems in well-known financial and economic institutions in China, the cultivation of information technology practice ability is mainly reflected in 3 aspects:

The first is to increase the number of hours in the experimental section of the professional curriculum. According to the requirements of Shanxi University of Finance and Economics “Guiding Opinions on the Work of Developing a General Full-time Undergraduate Professional Development Program (2018 Edition)”, the proportion of the total number of hours of practice in the humanities and social sciences should be greater than 15%, and the practical credits are not lower than 23 credits. Although the undergraduate major in Information Management and Information Systems of Shanxi University of Finance and Economics belongs to the humanities and social sciences majors, the degree is a bachelor's degree in management. However, when formulating talent development programs, it has been studied and referenced by other financial and economic institutions. The program emphasizes the cultivation of practical hands-on ability, and increases the proportion of practical teaching in the entire teaching process [5]. The proportion of practical teaching hours to total school hours is increased to 23.4%, and the practical credit is 36 credits.

The second is to increase the hands-on link of comprehensive practice. On the basis of the original graduation design and comprehensive practice of graduation internship, in the seventh semester, the 2-credit course of design course was added. With the help of the teacher, the students designed the experimental program positively, and completed the experimental program with the comprehensive application of the professional course knowledge. Thereby achieving the development effect of improving talent innovation and applying theoretical ability.

The third is closely connecting theory and practice. On the basis of continuous improvement of the school teaching environment, the theoretical and practical teaching process of professional courses should be arranged in the laboratory as much as possible [7], further embodying the concept of “study and application” of talent cultivation, and avoiding the disconnection between theoretical study and hands-on practice.
C. The embodiment of “Shanxi University of Finance and Economics”

The formulation of the development program is based on the transformation and development of resource-based economy in Shanxi Province, and builds the information management application talent development mode of “basic theory—technical application—practical development” + practical, emphasizing theoretical foundation, focusing on technology application and social practice. Specifically include:

First, adhere to the core of talent development objectives of Shanxi University of Finance and Economics, “To cultivate the applying social and economic development needs, with a strong professional foundation, strong practical ability, high comprehensive quality, innovative, innovative and international vision, application-oriented, compound high-quality professionals and top-notch innovative talents.”

Second, the curriculum system is based on the unified deployment of Shanxi University of Finance and Economics. It consists of four major platforms: the school's general courses, major courses, professional development courses, and open elective courses.

The third is the academic scores of the development of talents, the number of hours of study, as well as the academic scores and hours of various courses are set in the prescribed scope of the school.

D. In line with the latest national quality standards

The undergraduate professional personnel development of Shanxi University of Finance and Economics Information Management and Information System strictly implements the spirit and requirements of the Ministry of Education 2018 “National Standards for Undergraduate Professional Teaching Quality in Ordinary Colleges and Universities” [4]. On this basis, in accordance with the needs of the society and the advantages of Shanxi University of Finance and Economics, the training of the talents of this professional is carried out.

III. RESEARCH AND ANALYSIS

In order to better construct the undergraduate professional development program for information management and information system of Shanxi University of Finance and Economics in the new era environment, this research team conducted research on the development of undergraduate professionals in information management and information systems of major financial and economic institutions in China, including Dongbei University of Finance and Economics, Central University of Finance and Economics, Zhongnan University of Finance and Economics, Southwestern University of Finance and Economics and other well-known financial institutions of higher learning.

IV. THE CONSTRUCTION OF THE CURRICULUM SYSTEM

Following the basis of the talent development curriculum system formulated in accordance with the “Guiding Opinions on the Formulation of the General Full-time Undergraduate Professional Development Program (2018 Edition)” and the curriculum requirements for the information management and information system undergraduate talent development of the 2018 “National Standards for Undergraduate Professional Teaching Quality in Colleges and Universities” by the Ministry of Education, the professional basic courses and professional courses are detailed. Under the premise of retaining the core curriculum of the information management and information system professional talents, a new curriculum for featured applications was opened.

The undergraduate applied talent curriculum system of information management and information system includes four levels: school general courses, major subject courses, professional compulsory courses, professional electives and cross-featured elective courses. The school general course is a general course for all majors of Shanxi University of Finance and Economics; the major subject course is the core course of information management and information system belonging to management science and engineering discipline [6]; the compulsory course is a compulsory basic course for information management and information system. The professional elective and cross-featured elective courses are the “teaching students in accordance with the needs of the technical needs of professionals and the interest in professional technology”, as well as the expansion of interest in broadening the knowledge of talents and improving the quality of talents. The four levels are specifically distributed as follows:

The first level is mainly the ideological and political theory of all majors in the school, college English, university mathematics, university computer, university sports and other basic courses, including ideological and moral cultivation and legal basis, introduction to the basic principles of Marxism, college English I—IV, advanced Mathematics, Probability and Mathematical Statistics, university Computer Foundation, Database Technology, Programming (Python+MySQL) and so forth.

The second level is mainly the basic courses required for management science and engineering disciplines, including political economy, microeconomics, macroeconomics, econometrics, statistics, management, management information systems, enterprise resource planning, big data technology and application, etc [1].

The third layer is the compulsory basic course for information management and information system, including programming basis (JAVA), programming basis (JAVA) experiment, data structure (JAVA version), data structure (JAVA version) experiment, database system principle, database system principle experiment, computer network technology, computer network technology experiment, information system analysis and design, information system analysis and design experiment.

The fourth level of professional electives includes business intelligence, business intelligence experiments, advanced programming (JAVA), advanced programming (JAVA) experiments, Web systems and technologies, Web systems and technology experiments, network and information security, network and information security experiments, UML technology, UML technology experiment, information analysis tool, information analysis tool experiment, information
organization, storage and retrieval, information collection and analysis, Internet of Things foundation, Internet of Things basic experiment, artificial intelligence, data analysis introduction, mobile development technology, mobile development technology experiment, blockchain techniques and applications, data visualization and data analysis. The cross-featured elective courses include other courses in economics and management such as accounting, finance, marketing, and financial management, as well as courses in literature, art, law, and sports [3].

V. SUMMARY
The information management and information system of Shanxi University of Finance and Economics is in the light of new requirements of the new era environment, based on the National Standards for Undergraduate Professional Teaching Quality of the General Colleges and Universities issued by the Ministry of Education in 2018, combined with the characteristics of the school for information management and information systems. The research on featured application talents has been carried out in order to provide reference experience for the formulation of relevant undergraduate talent development programs for other institutions of higher learning.

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REFERENCES