

Research on the Construction of Modular Curriculum System for Logistics Management Specialty of Applied Undergraduate

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Abstract—The modular teaching aiming at post competency training consistent with the goal of training higher skilled talents in applied undergraduate colleges and universities, which provides ideas for the transformation of Applied Undergraduate Teaching mode. On the basis of defining the connotation of modular curriculum and the construction idea of modular curriculum system, taking the application-oriented undergraduate logistics management major as an example, this paper probes deeply into the construction path of modular curriculum system, and finally analyses the guarantee conditions for the implementation of modular teaching, so as to provide reference for the modular teaching reform of logistics management major in Colleges and universities.

Keywords—post competency; applied Undergraduate; logistics management; modular curriculum

I. INTRODUCTION

With the continuous promotion of the transformation from local undergraduate colleges to application-oriented ones, it has become an urgent problem to explore the teaching mode adapting to the training of application-oriented talents. In the practice of modularization reform of German vocational education since the beginning of the 21st century, modularization is regarded as an effective teaching mode to overcome the drawbacks of "dual system" and seamlessly link vocational competence and training, which has been written into the German Federal Vocational Education Act (BBiG). Modular teaching emphasizes the training of post competence or skills, which is consistent with the goal of Cultivating High-skilled Talents with strong practical ability and practical problem-solving ability for the Application-oriented Undergraduate Colleges and universities in China. It provides direction and ideas for the Application-oriented Undergraduate Colleges and Universities under the development of local economic transformation to explore suitable training mode for application-oriented talents. The breakthrough and difficulty of teaching reform lies in the setting of curriculum system which is consistent with the goal of personnel training. Based on the post competence of logistics industry, this paper creatively constructs the modular curriculum system of logistics specialty aiming at ability cultivation, which is an improvement and

innovation of the traditional teaching method with knowledge imparting as the core.

II. CONNOTATION OF MODULAR CURRICULUM

Modular curriculum is based on ability-based, breaking through the traditional subject-based restrictions. In the process of teaching, ability training runs through the training of talents, and teaching modules are set up based on the needs of post ability. Each teaching module is the basic teaching unit. Under the principle of the application of theoretical knowledge and the application of technical knowledge, the necessary professional knowledge and skills are selected as the basis for the construction of teaching content, and then a new curriculum system is formed by combining the teaching units associated with a specific ability training. The construction of modular curriculum system should take the ability-based curriculum concept as the starting point, and take the professional talent training goal as the basis. The ability training should run through every link of the formulation and implementation of the talent training program.

Modular teaching is based on traditional teaching, breaking through the limitation of traditional subject-based teaching, and improving and innovating the teaching mode of knowledge-centered and knowledge-imparting courses. The modular curriculum system under the concept of modular teaching breaks the original subject curriculum system and aims at the cultivation of abilities and skills. It is the inheritance, transformation and development of the original subject curriculum system. Therefore, in order to develop modular curriculum, we must do a good job in optimizing the teaching content of the original subject. Based on the business process and working process of the enterprise post, we should integrate the teaching content arrangement corresponding to the theoretical cognition, ability cultivation and quality basis of each work activity into a teaching module. On this basis, the teaching content of the subject system is rearranged, the teaching content set repeatedly for the construction of discipline integrity is eliminated, and the knowledge and theory needed by the emerging industry Posts accompanied by industrial transformation and upgrading and technological innovation are Construction of modular curriculum system

Supported by Wuhan Business University's 2018 scientific research project (No. 2018KY005)

With the help of modularization, local applied universities reform all aspects of teaching, pay attention to the improvement of students' application ability and comprehensive skills. We should start with the modularized curriculum, which is the most important part of modularized teaching, and deeply analyze the construction ideas and paths of modularized curriculum system. According to the orientation of local applied undergraduate professionals, this paper conducts in-depth research on the competence and skill requirements of industry post groups, and then combines the relevance and restriction of subject teaching content to determine the professional competence corresponding to post competence, combs and optimizes the classification of professional competence, further identifies the teaching knowledge points related to corresponding professional competence, and composes the teaching module. The modular teaching curriculum system adapted to the teaching of local applied undergraduate majors is composed of teaching modules. The idea of building modular curriculum system in applied undergraduate universities is shown in Figure 1 below.

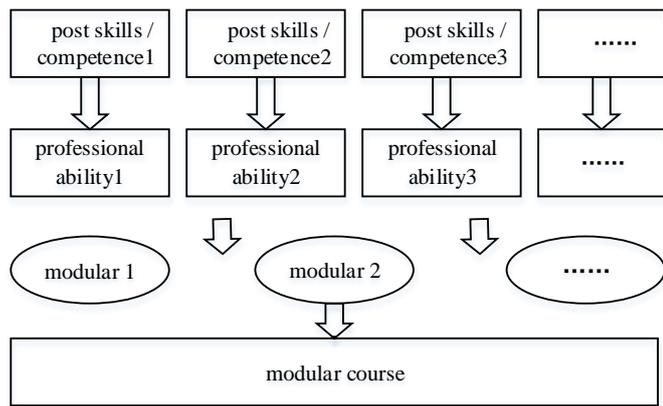


Fig.1. the Construction of Modular Curriculum System

III. CONSTRUCTION PATH OF MODULAR COURSE SYSTEM FOR LOGISTICS MANAGEMENT MAJOR

A. Determining the Training Objectives and Mode of Professional Talents

In accordance with the requirements of the Ministry of Education for the training of Applied Undergraduate talents, based on Wuhan City Circle and radiating Hubei Province, this major aims to cultivate high-level talents who can meet the needs of the development of modern business logistics industry, systematically grasp the knowledge and theory of business logistics management, have strong practical ability, high professional quality, have good comprehensive quality and career development potential, have the spirit of innovation and entrepreneurship and sense of social responsibility. Secondary application-oriented specialized logistics management personnel.

B. Identifying the Corresponding Professional Job Groups and Competency Requirements

Through tracking the employment of graduates majoring in Applied Undergraduate logistics management in recent years and investigating the demand for logistics talents in enterprises both inside and outside the province, it is concluded that the employment orientation of current graduates majoring in logistics management in local universities is roughly as follows: express company, third-party logistics enterprise, freight forwarding company, production and sales enterprise logistics, etc. Employment positions are roughly: customer service, marketing, warehousing, procurement, distribution, transportation and other six categories of dozens of sub-jobs. Most of the current logistics graduates start from grass-roots posts. After years of work experience accumulation and job rotation, there are gaps in Vocational ability, skills, career direction and so on, and then develop to higher-level posts. With the improvement of post level in logistics field, post competence has been improved in logistics information processing, logistics planning and application ability, foreign language expression and application ability on the basis of the job requirements of junior and intermediate posts in logistics industry.

C. Constructing Teaching Module According to Post Competence Requirements of Logistics Industry

To build a modular curriculum system, firstly, we need to analyze the skilled posts with high application ability in the above logistics field. Based on the typical logistics business processes of logistics enterprises, we analyze the logistics core competencies of different posts, so as to construct the logistics professional competencies and knowledge structure map. According to the requirement of post competence in logistics industry, the abstract post professional competence is concretely transformed into corresponding competency elements, and the competency module is formed through combination packaging. As shown in Figure 2 below, the professional competence module of logistics management can be divided into two categories and five types: one is theoretical competence module, which includes logistics concept and thinking, logistics operation and management, and logistics field expansion. Logistics concept and thinking is the cultivation of basic theoretical knowledge and ability in the field of logistics, and the accumulation of basic preparatory knowledge and ability needed in logistics learning or professional process. Logistics operation and management is the operation process and implementation ability training of logistics functional business activities. The expansion of logistics field is an extension of the basic theory and operation form of different forms of logistics field. The second is the practical ability module, including logistics management course experiment and logistics management comprehensive experiment. The experiment of logistics management course relies on theoretical teaching, and carries out practical activities such as logistics system simulation and optimization, supply chain management, logistics customs declaration and so on by using the theoretical knowledge of the course. On the basis of students' basic theory and knowledge in the field of logistics, the comprehensive experiment of Logistics

Management trains students' ability to analyze and solve problems comprehensively with professional ability.

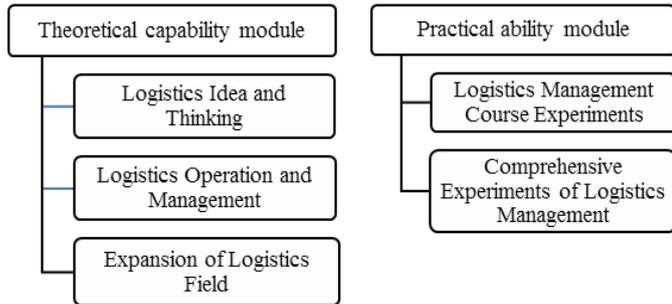


Fig.2. Classification of Logistics Management Professional Capability Module Settings

Through the analysis of five large capacity modules, the relationship between different capacity modules is determined, and the large capacity modules are divided, combined and encapsulated to form a small module from shallow to deep, which is the basic unit of teaching. Taking the logistics operation and management module in the theoretical capability module as an example, combining with the warehousing, transportation and other logistics operations of typical enterprises in the field of logistics, taking the operation process of each logistics business as the guidance, this part carries out the capability analysis and constructs the teaching module, as shown in table 1.

TABLE I. TEACHING MODULE SETTINGS BASED ON TWO TYPICAL BUSINESSES OF LOGISTICS INDUSTRY

Capability Decomposition		Capability Encapsulation	
Post	Capability	Teaching module	Course
warehousing	Warehousing cognition	Warehousing Management Foundation	Inventory Control and Warehousing Management
	Warehousing practice	Warehousing Management Outgoing Management In library Management Inventory Management	
Transportation	Transportation cognition	Transport Management Foundation	Logistics Transportation Management
	Transportation practice	Railway Transportation Road Transportation Waterway Transportation Air Transportation Container Multimodal Transportation	

D. Design of Course System for Applied Logistics Major Based on Modular Course

After defining the core posts and competence elements of logistics profession, according to the method of modular teaching unit setting, the logistics teaching experts inside and outside the school and representatives of local logistics enterprises are organized to discuss and revise the talent training plan and curriculum plan, and the concept of post competency-oriented is implemented in the curriculum system of Applied Undergraduate Logistics management specialty. Every teaching module set up should be described adequately. Module description includes module name, teaching module objectives, teaching content, module size (hours/credits), semester, teaching methods and assessment methods. The modular curriculum system is shown in Table 2.

TABLE II. DESIGN OF COURSE SYSTEM FOR LOGISTICS MANAGEMENT MAJOR OF APPLIED UNDERGRADUATE

Semester	Module Name/Credit							credit
1	College English 1/3.5	Advanced Mathematics (Part 1)/4	Sports 1/2	Ideological and Political Education/8	Computer Foundation/1.5	Career Development and Employment Guidance/1		22
2	College English2/3.5	Advanced Mathematics (Part 2)/4	Sports 2/2	Mental health education/2	Entrepreneurial Foundation/2	Management Science/3	College Chinese/1.5	24
3	College English3/3	linear algebra/3	Sports 3/2	Accounting/3	Logistics/3	Supply chain management/3		19
4	College English 4/2	Probability Theory and Mathematical Statistics/3	Sports 4/2	Inventory Control and Warehousing Management/3	Logistics Purchasing Management/3	Logistics Information Management/3	Third Party Logistics/3	19
5	Logistics Operations Research/3	Logistics Transportation Management/3	International Logistics/3	Logistics System Analysis/4	Commodity Circulation Science/2	Logistics Cost Management/3		18
6	Logistics Operation Management/3	Logistics facilities and equipment/3	Port logistics/2	Distribution Center Planning and Management/2	Logistics of Manufacturing Enterprises/2	Other elective courses		26
7	Logistics English/3	Logistics Customer Management/2	Cold Chain Logistics/2	Career Development and Employment Guidance/1	Supply Chain System/2	Course Design of Logistics Management/3	Express Logistics/2	18
8	Graduation Design (Thesis)/6			Graduation practice/9				15
Total credit	150							

IV. CONCLUSION

With the help of modularization, modular teaching can reform all aspects of teaching so as to realize the ability training of students and meet the requirements of applied talents training, which has become the trend of teaching reform in Applied Colleges and universities. The effective implementation of modular teaching also needs the system guarantee of modular teaching, modular teaching materials and "double-qualified" teachers as guarantee.

A. Improving the Institutional Guarantee

Modular teaching is not only the change of teaching mode, but also the practice of modular teaching idea in the field of education. The modular teaching reform promotes the overall change from management ideology to management system in Colleges and universities, and puts forward new requirements for the top-level design of colleges and universities. In order to guarantee the quality of modular teaching, it is necessary for colleges and universities to formulate a quality assurance system for implementing modular teaching from the top level design, and form a complete quality assurance system. Institutional guarantee can be carried out from three aspects: modular teaching quality, learning management and innovation ability training. The quality assurance of modular teaching should formulate corresponding systems in three aspects: teaching module setting, modular teaching and teaching evaluation; learning management is mainly to guarantee the autonomy and effectiveness of students' learning; it can formulate a series of guarantee systems including credit management, course selection regulations, graduation thesis/design, graduation practice, etc. Innovative ability training mainly relies on practical teaching and each other. As an innovative project, it is necessary to develop modular experiments, credit and reward system for students' participation in innovative projects, so as to encourage students to carry out innovative activities and cultivate students' practical ability.

B. Strengthen the Construction of Modular Textbooks

The foundation of implementing modular teaching and constructing modular curriculum system is the construction of modular teaching materials. In the past, the content of textbooks selected according to the traditional knowledge system of disciplines pursued the systematicness and integrity of theoretical knowledge, resulting in redundancy of knowledge in different courses. Modular teaching reform pays attention to the cultivation of students' post competence, especially the improvement of practical application skills. Traditional subject system teaching materials cannot meet the requirements of modular teaching. Therefore, the key point of modular teaching is to introduce modular teaching concept into the construction of teaching materials and establish modular teaching material system. The construction of teaching materials for applied majors in local colleges and universities should be closely combined with the orientation and characteristics of the school, and develop modular

teaching materials suitable for post competency training according to the training objectives of professional talents. The compilation and development of textbooks can be carried out in stages and layers. To highlight the key points, we should start with the core professional courses, step by step, continuously improve them, extend them to other courses, and finally build a systematic modular curriculum textbook system.

C. Training the Qualified Team of "Double Teachers"

Teachers are the main force in the reform and implementation of modular teaching. On the one hand, the development of modular teaching requires teachers to understand and accept the ability-based education concept of modular teaching; on the other hand, teachers should not only have solid professional theoretical knowledge, but also, more importantly, have rich practical experience in training students' application skills. Therefore, we should cultivate a group of high-level teachers with the ability of "double-qualified". In terms of the training of teachers, we can adopt the policy of "going out and introducing in", appoint young teachers or core teachers to "go out", go deep into enterprises to carry out on-the-job training, participate in practical work and increase teachers' practical experience; at the same time, we can invite experts from enterprises and industries to participate in the construction of professional training programs, and offer academic lectures or engage students. Enterprise personnel undertake some practical teaching tasks.

References

- [1] Hui Zhou, "Analysis of Post Competency in Logistics Industry Based on the Demand of Applied Undergraduate Talents," *Logistics Engineering and Management*, Vol. 25, pp. 151-153, August 2018, in Chinese.
- [2] Jian-zhong Liu, "Research on Curriculum Module of Application-oriented Undergraduate Universities," *Journal of Hefei University(Natural Sciences)*, Vol. 13, pp. 47-50, April 2011, in Chinese.
- [3] Nai-ping Jiang, "Modular Course Construction," *Vocational and Technical Education*, Vol. 22, pp.16-19, October 2001, in Chinese.
- [4] Guo-jiang Yu, "Course Modularization: A Path Exploration of Course Transition in Local Undergraduate Colleges," *Research on Higher Education in China*, Vol.19, pp 99-102, November 2014, in Chinese.
- [5] Hai-tao Li, "Construction of Course System under Modular Teaching Conditions," *Journal of Sichuan Vocational and Technical College*, Vol. 17, pp 82-83, May 2007, in Chinese.
- [6] Hui Zhou, "Probe into the Integrated Teaching Model of Logistics Major in Higher Vocational Colleges," *Logistics Engineering and Management*, Vol. 21, pp 203-204, November 2014, in Chinese.
- [7] Sun Xuemei, Xue Shiju. Research on Curriculum Design of Higher Vocational Education Based-on QFD. *International Journal of Education and Management Engineering*. 2012, 2(11):24-29.
- [8] Essaid EL HAJI, Abdellah Azmani, Mohamed El Harzli. Using FAHP in the Educational and Vocational Guidance[J]. *International Journal of Modern Education and Computer Science*, 2018, 10(12):36-43.
- [9] R. Kaviyarasi, T. Balasubramanian. Exploring the High Potential Factors that Affects Students' Academic Performance[J]. *International Journal of Education and Management Engineering*, 2018, 8(6):15-23.
- [10] S Anupama Kumar. Edifice an Educational Framework using Educational Data Mining and Visual Analytics[J]. *International Journal of Education and Management Engineering* 2016, 6(2):24-3