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Construction and Exploration of Experimental Teaching System for Logistics Management Major

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ABSTRACT
Training logistics management talents to meet the needs of the market is the focus of the construction of logistics management major in Colleges and universities. Applied logistics management talents require solid theoretical knowledge and strong practical ability. At present, the construction angle of experimental teaching system of logistics management specialty is relatively single, and there is no organic combination of laboratory construction and experimental teaching. This paper analyzes the problems in the construction of teaching conditions and low efficiency in the experimental teaching of logistics management specialty. On this basis, this paper proposes that the construction of experimental teaching system should be based on the idea of "three platforms, three stages and three levels"，and integrate the experimental teaching resources inside and outside the school from the multidimensional dimension of "2 + 3 + 4 dimensions", give full play to the advantages of different dimensions, and build an experimental teaching system centered on ability training. Create a good experimental teaching environment for students, improve the comprehensive quality and practical ability of logistics management graduates.

Keywords: *experimental teaching, applied talents, system*

1. INTRODUCTION

Logistics management major is an interdisciplinary major with the cultivation of students' comprehensive practical ability as the core. In addition to enabling students to master the relevant logistics professional knowledge and understand the development trend of the logistics industry, the more important thing is to cultivate professional logistics management talents in line with the social logistics industry, so as to reduce the disconnection between school training and social needs. Experimental teaching is the link between theoretical knowledge and practical application. Experimental teaching can help students consolidate the basic knowledge they have learned in theoretical courses, train their basic operation skills, and improve their ability to analyze, solve problems and unite and cooperate. It is an important teaching link to cultivate applied logistics talents.

In order to improve the teaching system of logistics management, train logistics talents who are both professional level and meet the market demand, the laboratory construction and experimental courses are integrated into the experimental teaching of logistics management, and the theory and practice develop simultaneously. Some colleges and logistics enterprises join hands and invest a lot of money to support the construction of integrated laboratories combining production, learning and research, so that students can experience the working environment of enterprises by simulating the real logistics activities of experimental enterprises, which will help them master their work skills. These comprehensive logistics laboratories provide a practical learning platform for training applied logistics management talents.

2. THE PROBLEMS IN THE EXPERIMENTAL TEACHING OF LOGISTICS MANAGEMENT MAJIOR

2. 1. Investment is not Directly Proportional to Usage

Although some colleges and universities have invested a lot of money to build a special logistics laboratory, due to the high unit price of logistics hardware equipment, a large amount of money has been invested in the final laboratory construction. However, the laboratory equipment is simple and the experimental

courses are mostly simple and repeated operation, lacking of comprehensiveness and innovation, so it is difficult to practice the application of simulated enterprise environment [1]. Some colleges and universities do not set up logistics laboratory due to the limitation of funds and site conditions, so they pay more attention to theoretical teaching in the teaching process of logistics management major. At the same time, the utilization rate of laboratories is not enough and the opening degree is not high [2]. The survey data show that the opening degree of laboratories in many universities is less than 50%. In particular, the utilization rate of hardware equipment laboratory with high investment is less than 20%. Investment and use are seriously out of proportion.

2.2. The Bondage of Traditional Teaching Concept

In the traditional teaching concept, most colleges and universities attach importance to theory rather than experiment, emphasize knowledge, ignore comprehensive ability, and attach importance to teachers' scientific research and students' achievements in cultural courses [3]. Faced with the simple logistics operation experiment module, teachers have limited time and energy, lack of motivation and enthusiasm to improve the quality of teaching experiments**;** students are more casual, fade the initial curiosity and interest in the experiment, deal with boring simple mechanical experiments, lack of initiative.

2.3. Experimental Textbooks are not in Line with the Needs of Experimental Teaching

The teaching materials selected in the experimental teaching tend to theoretical materials, and the high-quality and supporting course materials are relatively scarce [4], which cannot timely update the required textbooks, resulting in the current teaching materials cannot meet the teaching needs and are out of touch with the experimental software, Students cannot fully understand the experiment. According to the survey of students' satisfaction, it is found that in most colleges and universities offering logistics management major, students' satisfaction with logistics management experimental materials is not high.

2. 4. The Practical Teaching System Lacks Systematicness

The logistics major itself is a comprehensive and highly operational major. The whole operation process is very complex, and the requirements for students in all aspects are extremely strict [5]. The cultivation of comprehensive ability requires students to be familiar with and master the operation process of each link, and carry out systematic training through comprehensive experiments. However, the operation requirements and difficulties of each link are different, and the courses undertaking the ability training of these links are also relatively scattered. It is difficult to systematically design the logistics management experiment from a single course. Therefore, each student can only specialize in a certain plate of operation skills in the limited classroom experiments, so it is difficult to cultivate comprehensive and all-round logistics management talents.

3. THE CONSTRUCTION IDEA OF THE EXPERIMENTAL TEACHING SYSTEM OF LOGISTICS MANAGEMENT MAJOR

Combined with the experience in the front-line experimental teaching and the problems encountered in the teaching management, this paper systematically sorts out the experimental teaching resources, and puts forward some suggestions for the construction and reform of the experimental teaching system according to the characteristics of logistics management personnel training.

Logistics management major has the professional characteristics of "based on theory, focusing on practice". The teaching of logistics management specialty should adhere to the experimental teaching reform idea of "paying equal attention to theoretical teaching and practical teaching, paying equal attention to practical skills training and scientific thinking training", so as to improve students' ability and cultivate students' practical ability and scientific thinking. To achieve the seamless link between applied undergraduate teaching and graduate target positions, and shorten the time for graduates to achieve growth goals.

Experimental teaching can break through the limitation of time and space of theoretical teaching, achieve better teaching effect and achieve the goal of cultivating applied talents. Experimental teaching can break the limitation of time and space of theoretical teaching, play a better role in teaching effect and achieve the goal of cultivating applied talents. According to the principle of "objective, systematic, hierarchical and developmental" in the experimental teaching of logistics management specialty, this paper puts forward the "3+3+3"experimental teaching resource system, and puts forward the construction idea of "2+3+4"dimension experimental teaching system from the construction dimension of experimental teaching system.

3.1. "3+3+3" Experimental Teaching Resource System

"3 + 3 + 3" experimental teaching system refers to "three platforms, three stages and three levels".

3. 1. 1. The Elements of "Three Platforms" Experimental Teaching

"Three platforms" refers to the use of resources in and out of school to build basic experimental teaching platform, in-school and out of school teaching practice platform and university students' scientific research innovation platform, to meet the development needs of students [6]. The constituent elements of each level of the "three platforms" are shown in Figure 1.

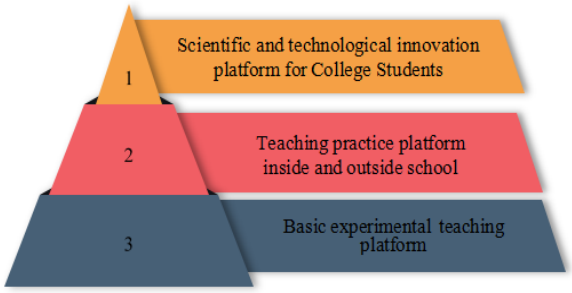

Figure1 Elements of "three platforms" Experimental Teaching

Basic experimental teaching platform mainly refers to the basic experimental teaching software and cognitive teaching laboratory. The teaching practice platform inside and outside the school refers to the campus simulation training platform and virtual simulation training platform established by the school. Scientific and technological innovation platform for college students refers to various competitions and university students' science and technology project platform related to logistics and management.

3. 1. 2. Connotation and Practice of "Three Stage" Experimental Teaching

"Three stages" refers to a three-stage experimental teaching system that follows the law of students' understanding and learning, according to the principle from easy to difficult, from shallow to deep, and in accordance with the goal of cultivating students' practical ability, thinking ability and application ability, and then constructs a three-stage experimental teaching system in which the foundation is consolidated, the skills are mastered and the ability is improved step by step [7]. The system framework of the "Three stages" experimental teaching is shown in Figure 2.

The stage of "Solid Foundation" refers to the basic training stage of professional skills. By using the basic experimental teaching platform, students can lay a solid foundation for the general situation of logistics industry, basic theory and process operation.

The stage of "Mastering Skills" mainly relies on the main experimental courses of professional core courses, such as Warehousing and Inventory management, Third-party Logistics, Logistics Facilities and Equipment, etc. to comprehensively train students' professional skills. Starting from the reform of experimental teaching method, the traditional teaching centered on teaching materials and led by teachers will be transformed into student-centered participatory teaching and flipped classroom teaching, so that students can change from passive and mechanical imitation to active participation, so that students can not only do experiments, but also talk about experiments and reform experiments, so as to promote students' autonomous learning ability, cooperative inquiry ability and information collection ability Improve the ability of scientific thinking such as comprehensive analysis ability and language expression ability.

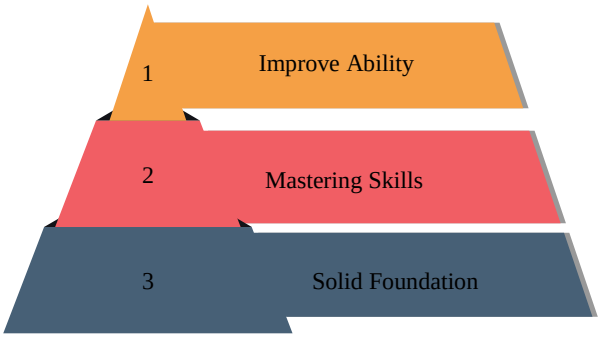

Figure 2 The System Framework of the "Three stages" Experimental Teaching

The "Improve Ability" stage refers to the opening of courses, professional practice and other courses, the use of the practice platform inside and outside the school, the comprehensive use of the research theory of core courses, combined with production practice to expand the classroom, so that students can "learn by doing, learn by doing", and improve professional skills in practice. At the same time, with the help of logistics design contest, university students innovation and entrepreneurship project, Internet and university students innovation and entrepreneurship contest, science and technology innovation week and other activities, students are allowed to write project books according to their interest direction under the guidance of their tutors and complete projects independently [8]. After a system of activities, students' professional knowledge and comprehensive ability can be further improved, laying a good foundation for future employment and professional development.

3. 1. 3. Connotation and Practice of "Three Levels" Teaching Content

According to the purpose and orientation of logistics management talents training, the basic skills, thinking ability and application ability of logistics are highlighted. The experimental teaching contents of different training stages are set into three levels: cognitive level, mastery level and application level. The "three-level"

experimental teaching system framework is shown in Figure 3.

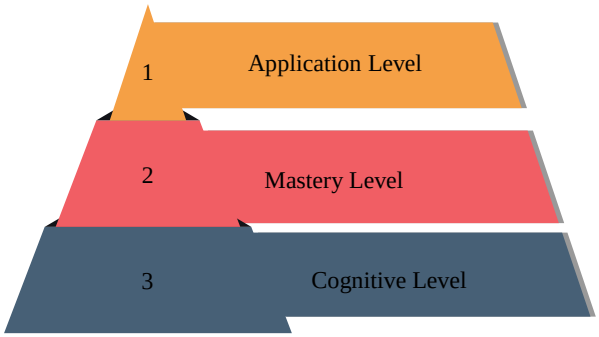

Figure3 The "three-level" Experimental Teaching System Framework

The "three-level" experimental teaching system is to gradually achieve the goal of cognitive level, mastery level and application level through systematic and hierarchical experimental training. The cognitive level is the primary level of experimental teaching ability training. Through the basic verification of experimental module, the understanding of theoretical knowledge is strengthened, and the basic operational ability is preliminarily possessed [9]; The mastery level is the intermediate level of ability training. Through the comprehensive improvement experiment, we can cultivate the ability of problem finding, comprehensive analysis and basic research ability**;** The application level is the advanced level of ability training. Students' ability to ask, analyze and solve problems can be cultivated by designing experiments.

The corresponding experimental types of "three levels" are basic verification experiment, comprehensive improvement experiment and design type experiment. According to the ability training objectives and the nature of the course, the confirmatory experiment, comprehensive improvement experiment and design experiment should be reasonably arranged for each experimental course. Generally, the proportion of arrangement is 1:2:1. Basic verification experiment can cultivate students' basic operation process, operation method and data collection skills, promote students' understanding of theoretical knowledge and master the basic means of logistics management**;** comprehensive improving experiment not only strengthens students' comprehensive ability and comprehensive quality, but also enables students to grasp the development frontier of modern logistics technology and management means in time**;** design innovative experiment On the basis of mastering professional experimental skills and understanding professional theoretical knowledge, students are required to design relevant experiments independently and cultivate their application ability of combining theory with practice.

4. "2+3+4" DIMENSION EXPERIMENTAL TEACHING SYSTEM CONSTRUCTION

Applied logistics management professionals need to master the basic process of logistics operations, but also have the comprehensive quality of management personnel. Reasonable and efficient laboratory construction and teaching system construction should be comprehensively considered from three aspects: laboratory construction fund investment, use effect and talent training demand [10]. On this basic level, this paper puts forward the design and construction of laboratory construction and experimental teaching system from the perspective of "2+3+4"dimension.

The "2+3+4"dimension in this paper is as follows: "2-dimensional" experimental platform is mainly used for the teaching of fixed operation process and operation method. This kind of experimental platform is of great help to master basic skills and lay a good foundation for the cultivation of students' logistics analysis ability. The "3D" experimental platform refers to the adoption of 3D virtual simulation technology. Virtual simulation experiment teaching relies on virtual reality, multimedia, human-computer interaction, database, network communication and other technologies to build a highly simulated virtual experimental environment and experimental objects. In the virtual teaching environment, students can achieve the goal of teaching. 3D simulation experimental teaching project has vivid environment, human-computer interaction, strong interest, and can better attract students' attention, which is to cultivate students' ability to integrate and apply professional knowledge. The “4-D” experimental platform refers to the external-campus practice base or the training room jointly constructed by the school and enterprise. Through short-term internship or post practice in the entity enterprise, it can contact with the actual work tasks and projects, and cultivate students' practical ability.

In the construction of laboratory and experimental teaching system, the reasonable development, design and effective application of 2D, 3D and 4D experimental teaching platform can effectively solve the problems in laboratory construction and experimental teaching of logistics management specialty, and achieve the goal of talent training.

5. CONCLUSION

The experimental teaching of logistics management plays a key role in the cultivation of applied talents. In the process of laboratory construction and experimental teaching system construction, we should consider from multidimensional. That is to say, the proportion of investment and efficiency of laboratory construction should be considered, as well as the teaching rules and teaching objectives. With the progress of science and

technology, the means and methods of experimental teaching are more and more abundant. The construction of experimental teaching system should be based on the analysis of professional characteristics, teaching rules and ability objectives of personnel training, and match and integrate the three aspects with the functions and functions of various experimental teaching platforms. Only by integrating the process of laboratory construction, the construction of experimental teaching system and the reform of experimental teaching methods, can the contradiction between laboratory construction and teaching be better solved.

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