

# Construction and Practice of Applied Logistics Management Undergraduate Curriculum System Under the New Logistics Professional Ability

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**Abstract:** Through the investigation of logistics management majors in some universities, the interview of relevant experts and the investigation of logistics management graduates as the main research objects, based on comprehensive analysis, it is found that the basic course of the subject plays an important role in the career development of the interviewees. Software operation ability, experimental operation and other practical skills are of great help to graduation internship and job hunting; The improvement of learning ability is beneficial to students' career development; A longer internship (e.g., more than one month) will help students master practical methods. In order to meet the requirements of the new logistics professional ability, it is necessary to improve the original training program of logistics management professionals greatly, so that the original "theoretical" training program becomes an application-oriented, practical and practical training program, so that the talent-training program is more in line with the needs of professional development. Try to change from teachers "teaching" talent-training mode to students "ability" talent training mode. The revised training program pays special attention to the improvement of students' learning ability and the mastery of practical operation ability, which is conducive to students' adapting to the needs of work and future career development as soon as possible. At the same time, it also change the current situation that students cannot choose elective courses in the original talent-training program to real elective courses, so that students can choose more suitable elective courses according to their interests and development direction.

## 1. Introduction

In 2001, the Ministry of Education approved the establishment of logistics major. By 2018, the number of colleges and universities offering logistics major had reached 466, and by 2021, the number of logistics management and engineering majors had reached 712. However, different schools have different situations, different problems, and different requirements on the students they produce, so the training programs can vary.

Since 2018, new logistics has become a hot new term in logistics industry. Wan Lin (2018) believes that new logistics is to enable merchants and enterprises to realize true zero inventory, including the Internet of Things technology, new retail logistics and global network. As the terms new retail and new logistics came into being relatively late, domestic and foreign scholars have few studies on the new logistics vocational ability, which is only limited to the discussion of vocational ability. The understanding of professional ability, although different people have different views, but the same.

In Baidu Encyclopedia, professional ability is defined as the combination of various abilities of people engaged in their careers, mainly including three elements: qualification, professional quality and career management ability.

In "Guidelines for the preparation of national training standards for skilled personnel" by the Professional Capacity Building Department of the Ministry of Human Resources and Social Security, Professional ability is point out that "the ability to solve comprehensive professional problems as a whole in a real work situation. It is a necessary skill for people to engage in one or several similar occupations, and it is the combination of general ability and professional ability. "Logistics professional ability can be the integration of various abilities that those engaged in logistics industry must have in their working process, and it is a kind of knowledge and ability to deal with logistics

affairs that those engaged in logistics work must have. Therefore, the new logistics professional ability can be the comprehensive quality, skills and knowledge necessary to engage in the logistics industry under the new logistics background. In March 2018, the Ministry of Education issued "National Standard for Teaching Quality of Undergraduate Specialty in General Colleges and Universities", which the national standards for the teaching quality of logistics management and engineering majors are proposed<sup>[1]</sup>. In the same year, the Ministry of Education issued "Notice on the Implementation of the Spirit of the National Conference on Undergraduate Education in Colleges and Universities in the New Era", which called for comprehensively sorting out the teaching content of all courses, eliminating the "water course" and creating the "golden course". As an application-oriented undergraduate college, we should study the construction and practice of application-oriented logistics management undergraduate course system under the new logistics professional ability, realize the optimization of logistics management courses, improve the curriculum system of logistics management specialty to promote the application transformation of logistics management specialty and improve students' new logistics professional ability. It is of great significance to improve effectively the teaching quality of the course, make students learn what they are good at, use what they learn, and better adapt to the society, improve students' employability and employment rate, promote students' income growth and career development after graduation, and deliver the talents they need for the society.

## 2. Relevant Literature Review

In the 1990s, German scholars Bremen and F·Rauner proposed to construct the teaching concept, teaching principle and teaching research skill development system of task goal realization system programmed teaching, believing that the working process is the system realization design organized by a certain team for the realization of task goals. Germany has reformed the curriculum model of higher vocational education, put forward the curriculum plan of "learning field", advocated the vocational, developmental, procedural, action-oriented and reflective nature of education, and issued the Guide to the Preparation of the Teaching Plan of Vocational Education Framework in Vocational Schools. The guide replaces the comprehensive curriculum plan based on the subject curriculum system with the "learning field" curriculum plan, focusing on developing the curriculum based on the working process system, teaching relevant skills, and truly realizing the organic integration of skills and knowledge through the reconstruction of the curriculum system<sup>[2,3]</sup>.

Cong Zhengyi (2006) analyzed the status quo, setting principles, attributes and implementation of higher vocational courses, and believed that the setting and implementation of higher vocational courses would have an impact on the quality of students, employment and employment quality, students' salary, and the final acceptance of the inspection of employment units<sup>[4]</sup>. Wang Hailing (2008) compared the curriculum offering of logistics management major and student employment in three universities in the Middle East and western regions of China, analyzed the relationship between the curriculum offering of logistics management major and student employment rate in general, and believed that the curriculum offering had a great impact on student employment rate<sup>[5]</sup>. Wang Guibin et al. (2008), based on the analysis of the ability requirements of international logistics positions for logistics talents, believed that the original curriculum system should be integrated into modular courses, courses reflecting professional knowledge and skills should be added, and electives for logistics skills competition should be set up<sup>[6]</sup>. Wu Xiang (2012) analyzed the demand for talents in the logistics industry, and believed that the curriculum system and core curriculum group of logistics management should be built to achieve an employment-oriented and competency-based education mode and cultivate compound high-skilled talents<sup>[7]</sup>. Li Guie (2012) believed that the curriculum system of logistics management major was not perfect and systematic, proposed a relatively systematic teaching model of logistics practical training courses, and introduced relevant curriculum construction examples<sup>[8]</sup>. Liu Chenghai (2013) investigated the situation of students in vocational schools and analyzed the relationship between curriculum setting and students' employment. Most of the interviewed students believed that what they learned in school was not helpful for their future work and hoped to master practical operation skills. In addition, the main reason is that the students'

positioning is not accurate, the major does not match, the comprehensive quality needs to be improved, and the legal consciousness needs to be strengthened<sup>[9]</sup>. Xu Daoyun (2013) analyzed the demand of logistics enterprises for vocational ability, studied the knowledge, ability and quality that logistics vocational post groups should possess, and believed that the curriculum system of logistics management in higher vocational colleges should be based on this demand, to realize the zero-distance connection between professional teaching and enterprise post skill demand<sup>[10]</sup>. Zhao Yapeng et al. (2015) believe that the logistics management of applied universities should cultivate outstanding logistics talents, so that they have broad knowledge, high comprehensive quality, and applied innovation ability integrated with analytical ability, comprehensive ability and innovation ability<sup>[11]</sup>. Tao Xiaoheng (2015) believes that the curriculum system of logistics management major in higher vocational colleges should be established to meet the dynamic, personalized and professional needs of the "modern apprenticeship" education model<sup>[12]</sup>. Xu Yajing (2016) analyzed the influence of English major curriculum reform in a well-known normal university on learning load, learning emotion and employment intention, and believed that curriculum reform increased students' learning burden and caused them to have temporary learning burnout, but had no significant influence on students' employment intention<sup>[13]</sup>. Wang Xiumei (2016) believes that in order to improve the quality of professional talent training, it is necessary to "build the professional curriculum system of the three platforms of comprehensive literacy course platform, specialized course platform and practical teaching platform", so as to provide guarantee for the realization of the goal of talent training<sup>[14]</sup>. Zheng Xiaoqing (2018) believes that the logistics management major should take professional quality education as the main line to build the logistics management curriculum system, select the teaching content in combination with the job tasks, and transform the curriculum system of subject knowledge into the curriculum system of vocational and technical skills<sup>[15]</sup>.

To a certain extent, these studies reflected the need for the construction of the curriculum system of logistics management specialty at that time, and had certain theoretical significance and reference significance. However, these existing studies also have some problems. First, they are more limited to the discussion and reasoning at the macro level, and lack of analysis and verification of micro individuals. Second, the interpretation of the result is not very accurate, simple and excessive emphasis on the practicability of knowledge, without considering the influence of the knowledge structure in the curriculum on the development of students, and does not consider the deviation of students' understanding of the practicability of knowledge. The learning process in school is a process of improving the comprehensive quality; third, overemphasize students' perception of the practicability of knowledge, and ignore their deviation in cognition; fourth, the employment rate is emphasized without considering employability. When evaluating the employment of students, we should not only emphasize the employment rate, but also pay more attention to the investigation of employability, to reflect the employment situation of graduates more objectively and fairly. Fifth, there are few studies on the effect of logistics curriculum on students' employment and career promotion. Especially in the new logistics background, the existing logistics management curriculum system needs to be further improved in order to train students to become logistics talents with new logistics professional ability for applied undergraduate colleges.

### **3. Training Program and Curriculum Setting of Logistics Management Major in Hainan Tropical Ocean University**

The logistics Management major of Hainan University of Tropical Oceanography has been adjusted every year since its first enrollment in 2009. In 2015 and 2016, the major has been adjusted to logistics management and port logistics. In 2017, there will be no port logistics direction. From the content of the adjustment of the training program of logistics management professionals in previous years, after 2017, the adjustment of the training program of logistics management professionals only made minor modifications or adjustments every year. In other words, our logistics management talent-training program has not changed much since 2017. Therefore, we choose 2018 logistics management professional talent training program as the reference object of this study. The following is an example to introduce the current situation of the logistics management talent training program of Hainan

University of Tropical Oceanography for the class of 2018.

### **3.1. The Composition and Content of the 2018 Logistics Management Professional Talent Training Program**

The 2018 undergraduate logistics management professional training program is divided into nine parts, namely training objectives, graduation requirements, length of schooling and degree awarding, credit requirements, recommended occupation (skill or level) certificates, main practical teaching links (including major professional experiments), teaching schedule, core courses and introduction, course hours, credits and semester schedule.

In addition to the general courses which cannot be changed independently by the major, there are 11 basic courses, 10 core courses, 9 practical courses, 8 specialized courses, 3 optional courses and 8 innovative and entrepreneurial quality development courses in the undergraduate teaching plan of Logistics management major of 2018. Among these courses, generally speaking, each course is 3-4 points for basic courses, 2-3 points for core courses, specialized courses and optional courses, 2 points for innovation and entrepreneurship quality development courses, and 0.5 weeks to 18 weeks for practical courses. The total credits are 169 points.

### **3.2. Grade 2018 Logistics Management Major Course Credits and Hours Allocation**

From the content section of the curriculum, general courses account for 51 credits, accounting for 30.1% of the total credits and this part of credits cannot be changed in this major. 35 points for basic courses, accounting for 20.7% of the total credits. 22 points for professional core courses, accounting for 13.0% of total credits. 25 points for practical teaching, accounting for 14.8% of total credits. 18 points for specialized courses, accounting for 10.7% of total credits. 6 credits for professional optional courses, accounting for 3.6% of the total credits. 12 credits for innovation and entrepreneurship quality courses, accounting for 7.1% of the total credits. From the perspective of theory and practice, 120 credits for theoretical teaching, accounting for 71.0% of the total credits; Practical teaching has 49 credits, accounting for 29.0% of the total credits.

In March 2014, the Ministry of Education set the direction of reform as turning 50% of the country's colleges and universities into application-oriented universities. In response to the higher education reform spirit of the Ministry of Education, Hainan Tropical Oceanology University has decided to transform itself into an application-oriented undergraduate university.

The so-called applied technology undergraduate refers to changing the original academic orientation of running schools and changing the orientation of running schools to the applied technology type, to meet the needs of our education for economic and social development. As an application-oriented undergraduate specialty, logistics management specialty is also determined as an application-oriented undergraduate specialty.

From the perspective of the training program for 2018 logistics management professionals, especially from the curriculum system of the program, compared with applied undergraduate majors, especially under the background of new logistics professional ability, the training program is necessary to be modified significantly.

### **3.3. There may be Some Problems in the Course Setting of this Major**

In the communication with students, students often mention some problems in the curriculum of this major. These problems mainly fall into the following aspects:

1. The number of courses is large and complex. There are more than 70 courses to be learned, and the categories involved are quite different.

2. The course learning is not in-depth and lacks key training programs. Most of the courses in the program only have 2 class hours per week, and some very important courses only have 3 class hours. It is difficult for students to learn things in so little time. Many courses are impossible to complete, and if they are completed, they are impossible to understand.

3. There are too many repeated courses, and there is the phenomenon of water lessons. There are too many same contents between courses, and some teachers have the phenomenon of coping with class.

4. Too little practical content, inconsistent with the name and reality of applied professional.

These problems reported by students may be our real problems. In addition to these problems, there may be other problems. In order to understand the problems existing in the curriculum of logistics management optimize and construct the curriculum system of logistics management accurately, the research group conducted a series of investigations and studies around the existing problems.

#### **4. Research on Relevant Issues**

In order to complete the research of this project, the research team has visited a number of colleges and universities to investigate and study their logistics management and related majors. During these visits and studies, experts and teachers from these schools put forward many valuable opinions on the talent-training program of our logistics management specialty. They believe that a long period of practice (such as more than one month) is conducive to students mastering the practical operation methods, and suggest that we reduce the number of courses and increase the learning time of each course. At the same time, we have conducted an extensive survey of the students who have graduated in order to understand the relevant situation of this project.

In the communication with college teachers, most of the teachers' suggestions or discussions mainly focus on the following three aspects: 1. In terms of applied undergraduate majors, practical courses take too little part in our talent-training program for logistics management majors. Experts do not agree on exactly how much. 2. There are too many courses in our curriculum, which leads to the duplication of some courses with other courses. 3. Which is more important, basic courses or professional courses? What is the appropriate ratio? The survey of students is as follows:

##### **4.1. Comprehensive Survey of Economics and Management Graduates**

Since most of the students majoring in logistics management are engaged in the work related to economy and management after graduation, and logistics management has a lot in common with other majors of economy and management, when selecting the research objects, we choose the graduates majoring in economy and management of our university as the research objects. The following is a brief report and analysis of the investigation:

A total of 213 answers were obtained in this questionnaire, of which about 10% had illogical, common sense or other problems. In order to ensure the authenticity and effectiveness of the questionnaire survey results and improve the quality of the questionnaire survey, the research group conducted a return visit to these respondents, and appropriately revised their data according to the actual situation and the return visit. Finally, 208 valid questionnaires were obtained, accounting for 50% of men and women, and 111 were students of our school, accounting for 53.37% of the respondents. In terms of whether they have participated in the postgraduate examination, 18.75% have graduated from graduate school, 4.33% are currently studying for graduate school, 11.54% have participated in the postgraduate entrance examination, and 65.38% have not participated in the postgraduate entrance examination. These figures show that some students also take the postgraduate entrance examination after graduation.

In terms of the nature of students' current work units, 52.88% of students work in general enterprises (non-financial enterprises), 7.21% in financial enterprises, 17.79% in administrative institutions, 7.69% in self-employment, and 14.42% in others.

From the current location of students' work units, workers in first-tier cities account for 20.67%, second-tier cities for 39.42%, third-tier cities for 27.4%, fourth-tier cities for 4.81%, small towns for 6.73%, and rural workers for 0.96%.

From the perspective of whether they are engaged in the work related to their major, 56.73% are engaged in the work related to their major, 43.27% are engaged in the work unrelated to their major.

From the current position, general staff (grass-roots staff) account for 37.5%, non-responsible type of general management posts account for 29.81%, unit or department heads account for 23.08%, lone Wolf boss (a boss working alone) account for 3.85%, others account for 5.77%.

The above four questions are mainly to understand the destination of students, which is conducive

to better improve our talent training program in the future.

In terms of whether they are satisfied with their current jobs, 4.81 percent are very satisfied, 30.29 percent are relatively satisfied, 38.94 percent are satisfied, 22.6 percent are average, and 3.37 percent are dissatisfied.

In terms of job transfer, that is, the current job of the interviewees (the job for more than 3 months), the first job accounted for 23.08%, the second job accounted for 30.29%, the third job accounted for 28.85%, the fourth job accounted for 9.13%, and the fifth and fifth jobs or more accounted for 8.65%.

In terms of satisfaction with their current income status, 3.37 percent were very satisfied, 11.54 percent were relatively satisfied, 35.1 percent were satisfied, 37.5 percent were very average, and 12.5 percent were dissatisfied.

The above three questions mainly investigate the tendency or willingness of graduates to transfer jobs, so as to consider the adjustment of course modules when formulating and adjusting training programs.

After graduation, which aspect of knowledge do the interviewees feel they lack most? 35.58% chose foreign language knowledge and ability, 21.15% chose social knowledge, 17.79% chose professional knowledge, 14.9% chose computer knowledge (including computer knowledge), and 6.73% chose the application and operation of professional software, 3.85% others.

When the total class hours are fixed, the interviewees agree with which of the following options can reduce the number of courses, increase the number of hours of each course, and make people learn more accurately, accounting for 61.54%. 38.46% interviewees believed that the number of courses could be increased, the number of hours of each course could be reduced, and the range of knowledge could be broadened.

As for the respondents' suggestions or opinions on their major, what knowledge is most needed to find a job and what knowledge is most needed to improve in the company, 73 respondents put forward their opinions, and some of them even wrote hundreds of words of opinions and suggestions. Eliminate some irrelevant content and duplicate content, and combine some highly similar or highly similar content; In order to make the content complete and maintain the original meaning of the interviewees, the interviewees' answers were modified as little as possible. The contents are mainly as follows:

Pay attention to practical operation; more cooperation with various enterprises; fully understand professional needs and give graduates more choice opportunities and practice. It is recommended to go to the same actual positions in this major. Pay attention to the practical use of the knowledge and student career planning. Let students take some certificates with high gold content. Reduce the number of courses and make them more detailed. Pay attention to the cultivation of foreign language ability. The courses offered should be selected as much as possible. There are too many related courses. I feel that there is no key point after learning. It is better if the course is more detailed. Set up courses that are more practical. Cultivate students' management ability, sales ability, report writing ability and computer knowledge

#### **4.2. Research on the Construction of Curriculum System of Logistics Management Specialty**

In terms of the object selection of the research on the construction of the logistics management curriculum system, considering that if you choose students who have not graduated or who have just graduated, although these students still have a general understanding of the courses of this major. After all, they have not entered the society or integrated into the society. If they choose students who have graduated for a long time, they have almost forgotten the courses in school. In addition, there are two directions for the logistics management major in 2016, and the number of courses offered is the largest. Therefore, the research group finally decided to choose two directions of 2016 logistics management major as the research object of course system construction.

Although the courses in the two directions are slightly different, they are the same. Both directions have some of the same courses, include as follows:

Advanced Mathematics, Probability Theory and Mathematical Statistics, Linear Algebra, Microeconomics, Macroeconomics, Management Principles, Accounting, Statistics, Financial

Management, Marketing, Operational Research, Supply Chain Management, Logistics System Analysis and Design, Logistics, Logistics Economics, Warehousing and Transportation Management, International Logistics, Logistics Engineering, Procurement Management, Logistics Facilities and Equipment, Logistics Information Management, Modern Port Logistics Management International Trade Theory and Practice.

In addition to the above courses, the direction of logistics management also includes the following courses: third-party logistics, e-commerce, container transportation practice, modern enterprise logistics management, production operation management. In addition to the same courses mentioned above, there are also the following courses: customs declaration and commodity inspection, international shipping management, container transportation and multimodal transport, international freight forwarding practice, maritime law.

In the process of investigation, it is found that the results of the two directions are also roughly the same. Therefore, the investigation situation of the two directions is introduced together:

1. About the answer of favorite courses (at least 3 courses, at most 5 courses), more than 20% are: Macroeconomics 26.60%, Microeconomics 25.53%, Principles of Management 25.53%, Procurement Management 25.53%, Logistics 24.47%, Accounting 21.28%, Linear Algebra 20.21%, E-commerce \*28.00%, Customs Declaration and Commodity inspection \*\*20.45% (\* Only for logistics management courses; \*\* is a course in port logistics. The same as below).

2. In the process of internship or job hunting, the courses that are most helpful to the interviewees (at least 3 courses, at most 5 courses), which reach more than 20% are: Principles of Management 37.23%, Financial management 24.47%, Marketing 24.47%, accounting 23.40%, supply chain management 22.34%, purchasing management 22.34%, e-commerce 24.00%\*.

3. As for the courses (at least 3 courses, at most 5 courses) that are most helpful to the interviewees in dealing with the problems in work and life, 20% of them are: Principles of Management 46.81%, macroeconomics 27.66%, microeconomics 26.60%, Accounting 25.53%, Financial management 25.53%, statistics 21.28%, e-commerce \*22.00%.

4. About the courses that help the respondents the least (at least 2 courses, at most 5 courses), 10% are: Advanced Mathematics 52.13%, logistics System Analysis and design 11.70%, Linear Algebra 41.49%, Container Transportation Practice \*10.64%, Probability Theory and Mathematical Statistics 30.85%, Container Transportation and Multimodal transport \*\*10.64%, Operations Research 20.21%, Maritime Law \*\*11.70%.

Many interviewees regard the three mathematics-related courses as the least helpful courses, indicating that many interviewees are not solid enough in the study of basic theories.

5. The respondents think that the most repetitive courses (at least 2 courses and at most 5 courses) reach 10% as follows:

Logistics 24.47%, Accounting 11.70%, Advanced Mathematics 18.09%, Logistics Facilities and Equipment 10.64%, Logistics Economics 15.96%, Container Transportation Practice \*18.09%, Probability Theory and Mathematical Statistics 14.89%, Modern enterprise Logistics Management \*16.00%, Linear Algebra 14.89%, International Freight Forwarding Practice 19.15%, International Logistics 13.83%.

Many interviewees regard the three mathematics-related courses as the most repeated courses, indicating that many interviewees are not solid enough in the study of basic theories and choose these three courses based on their personal preferences.

6. Regarding the attitude towards the opening of primary school, the answers of whether it is helpful to the interviewees are: greater help 6.38%, great help 23.40%, very general help 47.87%, basically no help 15.96%, pure waste of time 6.38%.

In terms of the respondents' jokes about primary school, there are mainly the following points:

(1) There are too many people to listen to the lecture, not enough seats, too little time arrangement, unreasonable time arrangement, and listening to the lecture is compulsive, credit only 2 points; Students are not interested in lectures per se, but because they are compulsory and required credits (this was also the view of the most math respondents);

(2) Primary school is not helpful to students, it is a waste of time, should not have primary school;

(3) Lectures are theoretical and not practical.

Most of the interviewees understood elementary school as a lecture. There is no doubt that this was a mistake in our work. A variety of activities should be carried out instead of the current single form of lectures, such as visiting a variety of well-known enterprises, knowledge competitions. As for lectures, consider holding them on weekdays.

7. Which of the following statements is closest to the respondents' feelings about innovation credits? (Single choice) stimulated my innovative thinking largely 9.57%; helped me to some extent 60.64%; helped me very little 27.66%; had no effect at all 2.13%.

The main roast about innovation credits are as follows:

Universities should emphasize innovation credits at the beginning. Many people know that innovation credits are too few to complete their studies until graduation. The score setting and access are not clear. How can we "innovate" by listening to lectures? It is difficult to calculate innovation credits, and innovation credits are almost useless. It is good to encourage students to get certificates and participate in activities, but the main thing is to pay attention to ordinary times. There should be a very, very detailed standard. An innovation credit is too many standards and too broad. It is OK to say that, but it can also be said that it is not. Innovation credits are divorced from reality to a certain extent, and it did not work. Innovation credits have not played their due role.

What knowledge or skills do the interviewees think are the most important for their internship and work? After a general synthesis of the answer to this question, the main contents are as follows:

(1) Logistics is the core link of the entity enterprise, which runs through the operation. Therefore, knowledge reserve or skills in management, psychology, economics and statistical analysis are required;

(2) Knowledge of procurement and inventory management, operation principles of enterprises, practical experience and ability in warehousing, practical operation of logistics facilities and equipment

(3) Computer knowledge, table processing ability, good command of office software such as word and ppt;

(4) Knowledge of supply chain management, understanding of basic equipment and data analysis;

(5) Management knowledge, communication skills, communicative ability, marketing ability, and computer application ability

(6) Specific work experience is very important, emotional intelligence, eloquence and courage are important, hard work is also very important

(7) The important thing is practical operation

(8) Thinking ability, interpersonal relationship, working attitude, language expression ability and communication skills;

(9) Learning ability, knowledge reserve of English, logistics, warehouse management, computer, etc.:

(10) The ability to operate and deal with things at random;

(11) Self-accumulated learning ability.

Among the respondents' answers, practical ability or practical experience is the most mentioned. It is believed generally that knowledge of management, economics and English are very important.

8. During my junior year, do you think it will be helpful for you to work as an intern in a logistics company for two weeks during the Singles' Day? 38.30% should be of great help, 31.91% should be of great help, 3.40% should be of little help, and 6.38% should be of little help.

9. In terms of the curriculum of this major, the interviewees think that the following courses should be added:

(1) College students' psychological counseling or college students' mental health, supply chain courses, cold chain logistics management, logistics professional English, oral English, social etiquette (workplace etiquette, interview etiquette, etc.), business operation, practical operation courses, cutting-edge courses, courses on dealing with others, practical international logistics, data analysis;

(2) Practical courses, rather than simple theoretical implementation, it is better to have practical courses such as logistics sand table;



(3) Regularly go to enterprise practice courses, add more practical courses, or add some hands-on courses;

(4) Courses related to logistics system programming, or more specialized and practical courses, which are helpful for students to obtain vocational skills;

(5) It is hoped that theory and practice can be combined. For example, in logistics, students can learn more about the basic operation and use of erp system and wms system, and it is better to have more practical operation experience;

(6) Arrange internship or summer internship for the major.

## **5. Thinking on the Construction of Curriculum System of Logistics Management Specialty**

Based on the above research and the experience of the logistics management major of our school, we propose the following ideas on the construction of the curriculum system of logistics management major:

### **5.1. Combined with the Actual Situation, Practice the National Standards of Teaching Quality**

According to the National Standards for Teaching Quality of Logistics Management and Engineering in the National Standards for Teaching Quality of Undergraduate Majors in Colleges and Universities <sup>[1]</sup> issued by the Ministry of Education (2018), specialized courses of logistics management and engineering include "teaching courses, practical teaching courses and specialized courses of innovation and entrepreneurship education". "The credits of elective courses in the training program should account for no less than 15 percent of the total credits, the credits of practical teaching should account for no less than 20 percent of the total credits, and the credits of practical teaching for logistics engineering majors should account for no less than 25 percent of the total credits." In addition, put forward the requirements for the curriculum:

1. General Education courses include "ideological and political theory courses, foreign languages, computers and information technology, etc. In addition to the teaching content stipulated by the state, colleges and universities can decide on their own according to their educational orientation and talent training goals." In our school, our school and total 51 credits determine the general courses.

2. Basic knowledge teaching courses "include advanced mathematics, linear algebra, probability theory and mathematical statistics, and basic courses set according to the modules of humanities and social sciences, natural sciences, etc."

3. Professional theory teaching courses "According to the characteristics of its own school-running orientation, it can independently set up basic courses and compulsory and elective courses for each major, and determine the requirements for credits. Each major should offer at least two core professional courses, such as supply chain management, logistics operation optimization, logistics system simulation, logistics information system, warehouse management, transportation management, etc."

4. Practical teaching courses should set up practical teaching links in theoretical courses according to the needs of professional teaching, reform-teaching methods, and increase the simulation, experimental training links and comprehensive training links in teaching. Universities should set up independent professional practice courses according to their own characteristics, including graduation thesis {design}."

5. As for the special courses of innovation and entrepreneurship education, four points are pointed out in the teaching quality standards of logistics management and engineering:

(1) "According to the talent training orientation and the requirements of innovation and entrepreneurship education objectives, adjust the professional curriculum. Increase the teaching links of innovation and entrepreneurship education. Set up compulsory and optional courses in the fields of creativity, foundation of creation, practical cases of innovation and entrepreneurship, development status and trend of logistics industry at home and abroad, employment and entrepreneurship guidance in logistics industry, etc. Include them in credit management."

(2) "Encourage all colleges and universities to share online open innovation and entrepreneurship courses or use innovation and entrepreneurship teaching resources developed and provided by third-

party institutions, establish learning certification and credit certification systems for online open courses, and form a collaborative education mechanism."

(3) "Set up reasonable innovation credits, establish the accumulation and conversion system of innovation and entrepreneurship, explore how to convert students' achievements in innovation experiments, publishing papers, obtaining patents and starting their own businesses into credits, and identify students' participation in professional research projects, project experiments and other activities as classroom learning and convert credits accordingly."

(4) "Encourage colleges and universities to organize students to participate in the National College Students Innovation and Entrepreneurship Competition and other professional skills competitions."

According to the national standards for Teaching Quality of Logistics Management and Engineering issued by the Ministry of Education (2018), these rules and requirements should be followed in the course setting of logistics management major to meet the national standards for teaching quality of logistics management major.

## **5.2. Increase the Subject Basic Course Hours, Tamp the Theoretical Foundation**

According to the results of the survey, basic courses are of great help to the interviewees in their internship and work life, on the contrary, only a few choose a major course. The reason for this is that basic courses provide thinking methods for our daily work, study and life. However, in the process of work, due to the different positions of each student, or even completely no longer related to their major, fewer interviewees choose the same course.

In the subject foundation course, advanced mathematics, linear algebra, probability theory and mathematical statistics are more controversial. The adjustment of these three courses has the following considerations:

1. Some respondents think these math courses are very useful, while others hold the opposite attitude. The reason for this is that they are standing at different angles.

2. These courses are the basic knowledge teaching courses clearly stipulated by the Ministry of Education (2018) in the National Standards for Teaching Quality of Logistics Management and Engineering.

3. These courses can lay the foundation for students' future career development.

4. Advanced Mathematics B-2 is more difficult, and subsequent courses are rarely used. Therefore, we can consider integrating B-1 and B-2 in one semester to learn advanced mathematics, to reduce students' learning difficulty.

5. Reduce the number of basic courses to eight courses, and put financial management and operations research in elective courses. Allow students to concentrate on a few subjects.

6. All courses will be increased from 3 credits to 4 credits.

In addition, there should be changes to the curriculum and student exams. The main ideas are as follows:

1. Implement two-way choice between teaching and learning. Students can choose the teacher according to the teacher's teaching situation and their own preferences. The teacher can put forward some basic requirements for the students to participate in his class, such as listening attentively, but cannot allow students to choose themselves because of the poor foundation of the students. For some students who cannot choose a teacher, a teacher can be appointed.

2. The basic course examination shall adopt the form of unified proposition (or selection of examination questions from the question bank), unified examination and unified anonymous examination papers.

3. The teacher can have a certain autonomy in the comprehensive score of the course. For example, the score can be adjusted according to the actual situation within a certain proportion.

4. The establishment of test bank, the implementation of machine test, the main types of questions can be single choice, multiple choice, fill in the blank (calculation questions can also be filled in the blank), judgment, etc.

5. The exam difficulty should be moderate, cannot be too difficult, also cannot be too easy.

Subject - based courses are often the bottleneck of students' career development. If the foundation

is not strong, the earth shakes. With solid basic courses, students will have a solid foundation for whatever they learn. No matter what they learn, it will become easier and their development space after employment will become broad. To create the logistics management professional characteristics of the "golden course" can also be in these subject basic courses.

### **5.3. As far as Possible, the Professional Courses and Specialized Courses are Taken to the Enterprise**

Except for a few courses, such as logistics, professional core courses and specialty courses should be taken to enterprises or laboratories as far as possible. Can pull students to the enterprise to take the course, never in the laboratory or classroom, not in the enterprise, but can be in the laboratory of the course, all to the laboratory. Let students learn and accept knowledge more emotionally in practice, to lay a solid foundation for future internship and job. To this end, work should be done in the following aspects:

1. Strengthen school-enterprise cooperation. Schools should cooperate with a variety of logistics enterprises and production enterprises. Only by strengthening school-enterprise cooperation, our teaching will not lose its goal and direction. Only by strengthening school-enterprise cooperation can students have a broader space for learning and development; only by strengthening the cooperation between schools and enterprises can we cultivate logistics talents needed by society.

2. Strengthen the training and promotion of teachers. During the summer vacation, or select teachers in batches to learn and exercise in the front line of enterprises. Teachers should live, eat and work with front-line individuals to understand the practical operation of this course and the current working, living and learning status of front-line individuals. Only in this way can the teaching process not be divorced from reality, to combine theory with practice.

3. Strengthen the construction of logistics laboratory. If conditions permit, improve the laboratory facilities, so that students have more convenient conditions to study.

4. Increase the number of hours of core courses and specialized courses, reduce the number of courses, so that students can have more time to learn the specified core courses and specialized courses, to achieve few but precise, few but deep.

5. The examination of core professional courses and specialized courses should be based on practical operation as far as possible. To this end, attention should be paid to the performance of students in peacetime and the assessment of students in peacetime, especially the assessment of the operation process.

6. If the core professional courses and specialized courses are brought to the enterprise, the relevant personnel of the enterprise can explain some knowledge and practical operation, and the enterprise personnel can give us students certain authority assessment.

7. For courses in enterprises or in laboratories, the ratio of hours and credits between theory and practice can be 1:2 or 1:1.

8. Compare theoretical knowledge and practical knowledge, guide practical operation with theory, and understand theory with practical operation. Combine theory and practice perfectly.

9. Make use of the enterprise platform, increase capital investment, and create the "golden course" and special course of logistics management specialty.

### **5.4. Increase the Class Hours of Practice and Cultivate Students' practical Ability**

In the survey of respondents, it is found that what they lack and need most is practical operation ability. Due to the poor practical ability, no matter where students work, it is difficult to start quickly, which brings trouble to the early work of students. In order to cultivate students' practical ability, so that students can quickly enter the working state during the internship and even after graduation, it is necessary to increase students' learning efforts in practical practice, increase the hours of practical practice, and greatly improve students' practical ability. Therefore, in addition to the above, as far as possible to pull professional courses and specialized courses to enterprises, to the laboratory to go to the following points, also need to do:

1. During the junior year, I will add a one-month professional internship in the form of in-post internship. This professional internship is best arranged during the Singles' Day, or other logistics

companies are most busy, the most need for work force.

2. Put forward requirements for students' professional practice and graduation practice. In addition to the requirements on the internship time, there should also be some regulations on the position where students practice, especially the graduation internship, students must rotate internship, must have internship in more than three positions, not always in the same position.

3. Reduce the learning time of theory class. Because the total credit hours are limited, so to increase the practice hours and credit hours, to cultivate students' practical ability, we have to reduce the theory hours and credit hours. To this end, the number of courses and credit hours of course theory should be reduced, including basic teaching courses, professional theory teaching courses, professional core courses and specialty courses.

### **5.5. Increase the Number of Elective Courses and Credits to Improve Students' learning Ability**

According to the National Standards for the teaching quality of logistics management and Engineering in the National Standards for the Teaching Quality of Undergraduate Majors in Colleges and Universities issued by the Ministry of Education (2018), the credits of elective courses in the training program shall account for no less than 15% of the total credits. However, in our talent cultivation program for logistics management majors, although 4 credits of elective courses in general courses can be selected, only 6 credits of elective courses for majors can be selected only by the teacher. As for the students, they have to listen to whatever course the teacher chooses. In order to improve students' learning ability and enable them to pursue the knowledge they love, and make the optional courses of majors real optional courses, the following aspects can be done well:

1. Put the cut courses in the original courses into the elective courses, which are together with the elective courses in the original training program, and on this basis, establish a set of elective courses system.

2. Improve the elective course system. The elective courses are divided into five parts: the first part is related to English, you can choose one of them; the second block is related to the study of basic courses, at least 2 credits; the third is skills-related and requires 2 credits; the fourth part is related to the major and requires 2 credits. The fifth block is related to management and requires 1 credit. In choosing these courses, students have to choose from each of the five courses. Each class needs to specify an appropriate credit. The above rules are only for reference.

3. According to the coherence of knowledge among courses, different elective courses are arranged in different semesters. These elective courses are mainly self-study, to cultivate students' self-study ability.

4. Assessment of elective courses. Because elective courses are mainly self-taught courses, so the examination of elective courses becomes the key to the success or failure of elective courses. We believe that the assessment of electives mainly focuses on the assessment of basic knowledge and the assessment of learning time.

The assessment of usual learning can be placed mainly on the examination of reading notes. As for reading notes, many students cheat or slack off. Therefore, students' notes can be requested.

Reading notes may or may not be returned to the student after the teacher has checked them.

If the notes are not returned to the student after examination, ask the student in advance not to write any words on the first page of the notes. When students submit their notes, have the students copy a sentence on the first page. Check that the handwriting in the notes matches that of the sentence. If it is too far off, it gets 0 points.

If the reading notes should be returned to the students after the examination, the reading notes should have more requirements. For example, reading notes must be notebooks.

You cannot replace a notebook with a few pieces of paper. No score can be given for notes in textbooks. If it is necessary for learning, you can insert pages, but you will not get high marks for inserting pages. On the front page of the book, you should write "the reading notes of a certain course", and you must write your name and student number in order to check and register your scores. In the header or footer of page 1 of each sheet of paper, the time of taking notes and the student's own name and student number should be written too. The time to take notes and the names of students should

be listed under the title of each chapter. If the title of the chapter is on a single page, the time may not be written, but the name shall be written. You can also ask students to write down the time of taking notes and their own names and student numbers in the header or footer of each page.

These requirements are mainly to prevent students from cheating on notes, such as taking other people's notes to pass off as their own, in order to obtain credit; at the same time, it is also conducive to students to develop a good habit of self-study.

For the examination of elective courses, only reading notes can be checked or students can only master the basic knowledge can be assessed, or the two can be combined, and the comprehensive score can be calculated according to a certain proportion.

5. For some students generally want to learn, but self-study difficult courses, can use the form of teacher teaching.

### **5.6. Encourage and Guide Students to Develop and Acquire Various Skills**

It is important to encourage, guide, and develop students to acquire multiple skills through their own efforts. Students acquire a variety of skills, which can lay a solid foundation for students to practice and work after graduation. Therefore, it is very important to learn and acquire skills, which is also a reflection of learning ability.

1. Encourage, guide and cultivate students to learn and acquire various office software skills through daily study and life.

2. Encourage, guide and cultivate students to learn and acquire the skills of using and operating various machines and equipment through internship, professional practice, graduation practice and participating in various college student competitions.

3. Encourage, guide and train students to learn and master the skills of using various logistics software, and the basic operation and use of ERP management system and WMS warehouse management system through various practical exercises and participating in various college student competitions.

4. Encourage and guide students to obtain various skills certificates through their own efforts.

5. All kinds of skills acquired by students and rewards obtained by participating in competitions can be converted into credits accordingly.

Encouraging and guiding students to cultivate and acquire various skills can improve students' learning enthusiasm, improve their practical ability and even their employability, so that students can adapt to work needs faster after graduation.

### **5.7. The Tentative Idea of the Curriculum Setting of Logistics Management**

In order to meet the needs of the new logistics professional ability, according to the requirements of the training of applied logistics management undergraduate talents in our university, combined with the survey of some universities and respondents and the above analysis, the research group has made a significant adjustment to the logistics management major curriculum system in our university.

Only 8 basic courses will be kept, and the credits of each course will be increased to 4-5 points. Major core courses are adjusted to 7, each course is 3 points; Specialty courses adjusted to 4, each course 2 points; Optional courses are divided into 5 modules, each of which requires 2 points. These courses are study on students' own and guided by teachers. Innovation and entrepreneurship development courses increase students' competitive content and practical ability; Professional practice course is added to the practical course. This course is arranged for students to work as interns in logistics enterprises when logistics is very busy. The total credits are 162.

Compared with the class of 2018, the adjusted logistics management course class period allocation table reduces the theoretical class hours by 172 hours, and another 170 hours can study on students' own by themselves. Theory credits cut down by 12, with an additional 10 points available for self-study; the number of practice hours increased by 51 and practice hours increased by seven. The proportion of practice hours increased from 29.0 percent to 32.6 percent, and the total number of credits decreased from 169 to 162. It not only increases the cultivation of students' ability, but also reduces the burden of students. As a teacher, with fewer class hours, they can spend more time on their own courses, creating conditions for creating "golden lessons".

If the general courses determined by the school are excluded, although the credits of basic courses of professional subjects are increased significantly, the proportion of theoretical courses is also decreased significantly after modification, from 64.4% to 59.6%. The proportion of practical courses increased significantly, from 35.6% to 40.4%.

In addition, the talent-training program, especially the curriculum must let students know, enrollment education must do a good job of publicity of this content.

## **5.8. Conclusion**

Theoretical courses can increase students' knowledge and lay a foundation for long-term development. Practical courses are more utilitarian, in line with recent interests, and conducive to job hunting. In order to solve this contradiction, we can reduce the number of basic subject courses and increase the weekly study hours of basic subject courses. At the same time, we will increase the proportion of credits and class hours of practical courses. This change is not only beneficial to the long-term development of students in the future, but also can take care of the short-term interests of students. In addition, we should pay attention to the cultivation of students' learning ability by using elective courses. Such a training program will be more beneficial to the development of students.

## **6. Possible Innovations and Limitations of this Study**

### **6.1. Possible Innovations in this Study**

Our research group has done a lot of work in this research, and there may be some innovations. There are mainly three aspects:

1. Greatly improved the original training program for logistics management professionals, making the original "theoretical" training program into an application-oriented, practical and practical training program, making the talent training program more in line with the needs of professional development.

2. I try to implement the anonymous review and defense of graduation thesis, which makes the review and defense of graduation thesis more fair and just, and has been highly praised by the majority of students, at the same time; it also improves the quality of graduation thesis.

3. Try to change from "lecture-oriented" talent training program to "competence-oriented" talent training program. The training program especially focuses on improving students' learning ability, which is conducive to their future career development. At the same time, it also makes the current situation that students cannot choose elective courses in the original talent-training program become real elective courses, so that students can choose their more suitable courses according to their preferences and development direction.

Of course, these possible innovations are only relative to the school-based major.

### **6.2. Limitations of this Study**

Due to the limited resources that can be mobilized, the participants' time and energy are limited after all, and the respondents may have cognitive deficiencies and other problems, so this study inevitably has a variety of problems. It is mainly manifested in the following aspects:

1. Fewer research objects and limited scope. In addition to some university experts, the interviewees in this study are mainly graduates of logistics management major of our university, followed by non-graduates of this major, students of business school, and finally students and graduates of other schools of our university as well as graduates of economics and management of other schools.

2. The implementation of curriculum is difficult. Based on the original, the curriculum of this study has been changed greatly, which will involve the interests of all teachers of logistics management major. It is necessary to coordinate the interest relationship between teachers of this major and other majors, and even require corresponding adjustment or reform of other majors. But doing so is somewhat difficult.

- (1) The curriculum of logistics management major greatly reduces the teaching courses for

teachers, which will lead to the reduction of teaching tasks for teachers of this major, and directly lead to the reduction of their performance and income.

(2) The curriculum of logistics management has greatly increased the practical operation course, which requires corresponding teachers to learn again to meet the teaching needs of students.

(3) To implement this talent-training program, we need to further strengthen the cooperation between schools and enterprises, establish more practice and training bases, and improve experimental facilities and equipment.

(4) Teaching reform often meets unexpected resistance.

In order to solve these difficulties, the first thing to do is to solve the awareness problem of teachers. In addition to the concerted efforts of teachers in their own profession, they also need the strong support of secondary colleges and even schools.

3. In terms of the analysis of the curriculum summary of the talent training program, the curriculum summary of the logistics management major of 2018 can better reflect the current situation of the logistics management talent training program, so the table is used as the reference object in the analysis. However, since the logistics management major of 2016 has two directions, there are generally more courses than those of 2018. Therefore, in order to fully consider the situation of more courses in the analysis of each course and course research, we choose the courses of 2016 in two directions. Therefore, from the perspective of the analysis object, there are inconsistencies in the analysis.

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