

Research on the Apprenticeship Mode of Integration of dual Innovation Education in Logistics Major under the Background of New Era

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Abstract: The purpose of this study is to explore the effective path of the integration of apprenticeship model in the background of the new era. At present, the traditional logistics professional education has some problems, such as the disconnection between theory and practice and the lack of innovation and entrepreneurship education, which cannot meet the demand for high-quality talents in the logistics industry. According to the research, the implementation of the apprenticeship model of the integration of entrepreneurship and innovation education for logistics majors in the new era is faced with many difficulties: the educational concept is far from the educational requirements of "entrepreneurship and innovation"; Innovation and entrepreneurship education and professional education cannot be effectively integrated; The curriculum construction of innovation and entrepreneurship education is incomplete and there is a serious shortage of teachers for "mass entrepreneurship and innovation" education. In this regard, this study puts forward targeted suggestions for improvement.

Keywords: Entrepreneurship and Innovation Education Integration; Apprenticeship System; Entrepreneurship Education.

1. Introduction

In the context of the new era, the logistics industry is facing the challenges and opportunities of comprehensive transformation and upgrading. As an important support of modern economy, the development of logistics is not only related to the competitiveness and sustainable development of national economy, but also directly affects people's life and production mode. With the rapid development of information technology and economic integration under the background of globalization, logistics business is becoming increasingly complex, from the traditional transportation and storage to the integrated nature of supply chain management change, the demand for logistics professionals is increasing.

However, there are many problems in the traditional logistics professional education. On the one hand, logistics professional education generally pays attention to the imparting of theoretical knowledge, and lacks the training of practical ability closely combined with practical work. On the other hand, innovation and entrepreneurship education, as one of the core elements of the new era, plays an important role in cultivating students' innovative thinking, entrepreneurial consciousness and entrepreneurial ability.

In this context, the logistics professional dual innovation education integration apprenticeship model has been put forward as an innovative education model to solve the above problems. The apprenticeship model is an education mode that combines practical work and theoretical learning, which can better cultivate students' practical operation ability and innovation and entrepreneurship literacy. The double innovation and entrepreneurship education for logistics majors integrates the elements of innovation and entrepreneurship into the professional education, so that students can have the ability of innovation and entrepreneurship while learning professionally. Through the apprenticeship model, students can practice in actual logistics work, learn and apply the knowledge of innovation and entrepreneurship, and cultivate the awareness of innovation

and practical ability. This mode can effectively improve the comprehensive quality of logistics professionals and meet the demand for high-quality talents in the logistics industry in the new era [1].

However, at present, the research on the apprenticeship model of the integration of entrepreneurship and innovation education for logistics professionals is still relatively limited. It is necessary to conduct in-depth research on how to build a curriculum system of logistics dual entrepreneurship education that ADAPTS to the requirements of the new era, how to improve teachers' innovation and entrepreneurship literacy and teaching ability, and how to effectively integrate practical teaching resources.

Therefore, the purpose of this study is to explore the effective path of the integration of the apprenticeship model in the background of the new era, so as to provide theoretical support and practical guidance for the reform and innovation of logistics professional education.

2. An Overview of the Integrated Apprenticeship Model of Dual Innovation Education for Logistics Majors under the New Era Background

2.1. Significance and Characteristics of Dual-Innovation Education for Logistics Majors

As an important part of modern economy, logistics industry is constantly changing and developing. In the context of the new era, the logistics industry is facing new opportunities and challenges, including the rapid development of digital technologies, the personalization and customization of consumer needs, and the complexity of supply chains. These changes require logistics management talents to have not only professional knowledge and skills, but also innovative spirit and entrepreneurial ability, able to proactively respond to market changes and promote enterprise innovation and

development.

Mass innovation and innovation education emphasizes the education mode of higher vocational college students to cultivate innovative consciousness, innovative thinking and innovative ability, and actively guides students to participate in entrepreneurial practice and cultivate entrepreneurial spirit and entrepreneurial skills. The integration of this kind of innovation and entrepreneurship education with logistics professional education has the following significance.

First, adapt to the development of the industry. Double innovation education for logistics majors can enable students in higher vocational colleges to better understand the development trend and innovation needs of the logistics industry, and cultivate the ability to adapt to changes in the industry. Students are able to learn from practice and apply innovative thinking to solve practical logistics problems and provide competitive solutions for enterprises.

Secondly, they should exercise their comprehensive ability. Mass entrepreneurship and innovation education focuses on cultivating students' comprehensive abilities, including creativity, leadership, teamwork and problem solving. The integrated entrepreneurship and innovation education for logistics majors can cultivate students' comprehensive ability in logistics and enhance their market competitiveness through project practice and teamwork.

Third, promote innovation and development. The problems and challenges facing the logistics industry require innovative thinking and solutions. Through mass innovation education, the innovation ability of logistics students is cultivated, and they are encouraged to look for innovative opportunities and solutions in logistics management and services, so as to promote the innovative development of the logistics industry [2].

2.2. The Concept and Characteristics of Apprenticeship Model in Modern Education

The apprenticeship model is a traditional vocational training model that aims to pass on practical experience and skills to future generations of apprentices through learning and interaction between masters and apprentices. The apprenticeship model emphasizes the importance of practical training and work experience, combining theoretical knowledge with practical operation to enable apprentices to gradually grow and improve in practical work.

Features of the apprenticeship model include:

First, there is intimate interaction between mentors and apprentices. The apprenticeship model emphasizes the close relationship and interaction between master and apprentice. As a mentor and instructor, the master forms a good relationship with the apprentice and provides targeted guidance and training.

Secondly, practice-oriented teaching. The apprenticeship model develops the knowledge and skills of apprentices through practical work experience. Apprentices learn and practice in real work, improving their abilities through imitation, hands-on practice, and reflection.

Third, progressive learning. The apprenticeship model uses a progressive learning approach, in which apprentices start with simple tasks and gradually touch and master more complex work content. In practice, apprentices accumulate experience and improve their working ability and skill level [3].

2.3. In the New Era, It is Necessary to Explore the Integration of the Apprenticeship Model of Mass Innovation Education for Logistics Majors

In the new era, exploring the integrated apprenticeship model of logistics professional dual-innovation education will help cultivate innovation and entrepreneurship ability. With the rapid development and transformation of the logistics industry, traditional professional knowledge and skills are no longer enough, and logistics professionals need to have innovation and entrepreneurship ability to cope with market demand. Through the integration of entrepreneurship and innovation education with the apprenticeship model, students can learn key abilities such as innovative thinking, teamwork and project management in actual work, and cultivate entrepreneurship and innovation awareness.

Exploring the integrated apprenticeship model of mass innovation education for logistics majors in the new era will help combine practice and theory. The learning of logistics majors needs to be combined with practical operation and practical experience, and the apprenticeship model relies on the guidance and training of masters in the work to cultivate students' skills and literacy. Through the apprenticeship mode, students in higher vocational colleges can gain real logistics work experience, get familiar with industry processes and operational skills, better understand the practical application of logistics management, and improve their comprehensive quality and employment competitiveness [4].

3. The Implementation Dilemma of the Integrated Apprenticeship Mode of Mass Innovation and Innovation Education for Logistics Majors in the New Era

3.1. There is a Big Difference Between the Educational Concept and the Educational Requirements of "Mass Entrepreneurship and Innovation"

First of all, traditional education tends to transfer knowledge rather than practice training. Traditional education pays more attention to knowledge transfer and students' theoretical learning, while "mass innovation" education emphasizes students' practical ability and innovative spirit. However, in logistics majors, the education system is often biased toward instilling basic knowledge and theory, while neglecting the cultivation of practical operation and innovation ability. This bias makes it difficult for students to adapt to the rapidly developing needs of the logistics industry due to their lack of practical application ability and creativity in the face of practical work, which hinders the effective integration and implementation of the entrepreneurship and innovation education and apprenticeship model.

Second, the educational evaluation system focuses on theoretical test scores. The educational evaluation system often takes students' scores in theoretical exams as the main measure, while the evaluation of practical ability and innovative thinking is not sufficient. This leads students to spend more time and energy on pursuing high scores and test-taking skills, while neglecting the cultivation of practical operation and innovative practice. In logistics majors, the apprenticeship model requires students to cultivate their skills

and literacy through practical work, while the educational evaluation system that focuses too much on theoretical test scores is difficult to provide an accurate assessment of students' actual ability and innovation potential, limiting the effective implementation of the apprenticeship model of the integration of mass innovation education [5].

3.2. Innovation and Entrepreneurship Education Cannot be Effectively Integrated with Professional Education

First of all, the educational goals of the two are inconsistent. Innovation and entrepreneurship education focuses on cultivating students' innovative thinking, teamwork and market insight, so as to cultivate students to become innovative talents with entrepreneurial ability. In the logistics education, the focus is to train students to master logistics management theory, operation skills and business knowledge, in order to become professional practical talents. There are some differences in the educational goals of the two, which makes it difficult to effectively integrate innovation and entrepreneurship education with professional education. In the process of receiving logistics professional education, students may lack the thinking and ability required for innovation and entrepreneurship, which limits the in-depth implementation of entrepreneurship and innovation education and apprenticeship model.

Secondly, there is a mismatch between the curriculum of the two. Innovation and entrepreneurship education needs to provide courses including entrepreneurship theory, innovation method, marketing and other related courses to cultivate students' entrepreneurial literacy and innovation ability. However, in the curriculum setting of logistics majors, there is often a bias towards imparting theoretical knowledge and practical skills of logistics management to meet the requirements of the industry. As a result of this mismatch in curriculum setting, students in higher vocational colleges are exposed to limited innovative and entrepreneurial elements in the process of education, and it is difficult to cultivate students' innovative thinking and entrepreneurial ability. Therefore, it is an important dilemma to coordinate and integrate the curriculum of innovation and entrepreneurship education and professional education when implementing the integrated apprenticeship model of mass innovation and entrepreneurship education for logistics majors [6].

The inconsistency of educational goals and the mismatch of curriculum Settings limit the cultivation of students' innovation and entrepreneurship ability, and hinder the in-depth implementation of the dual entrepreneurship education and apprenticeship model. To solve this dilemma, educational institutions need to carry out curriculum reform and educational concept adjustment, integrate the elements of innovation and entrepreneurship into the logistics professional education, and establish a curriculum system that integrates innovation and entrepreneurship with professional skills, so as to promote the all-round development of students and meet the needs of the industry.

3.3. The Curriculum Construction of Innovation and Entrepreneurship Education is not Complete

On the one hand, it lacks a comprehensive curriculum system. At present, the curriculum of innovation and entrepreneurship education in logistics major is usually

scattered and fragmented, lacking a unified curriculum system. Due to the lack of unified planning and guidance, it is common for schools and teachers to set up innovation and entrepreneurship related courses on their own, but the curriculum is often scattered and isolated, lacking integration and coherence. This leads to overlapping, missing or conflicting knowledge and skills that students are exposed to in innovation and entrepreneurship education, which fails to form a systematic cultivation of innovation and entrepreneurship ability.

On the other hand, there is a lack of unified teaching materials and teaching resources. Innovation and entrepreneurship education needs scientific and authoritative teaching materials and abundant teaching resources as support, but there is still a lack of unified and comprehensive teaching materials and teaching resources. Due to the rapid update of knowledge and technology in the field of innovation and entrepreneurship, the update of teaching materials and teaching resources lags behind the actual development and cannot meet the needs of students for comprehensive study and practice. In addition, due to the current situation of fragmented curriculum, teachers are also faced with the confusion of choosing suitable textbooks and resources, which makes it difficult to achieve a unified and high-quality curriculum construction of innovation and entrepreneurship education [7].

3.4. There is a Serious Shortage of Teachers for "Mass Entrepreneurship and Innovation" Education

The serious shortage of teachers for mass entrepreneurship and innovation education is reflected in the lack of innovation and entrepreneurship experience." The core of mass entrepreneurship and innovation education is to cultivate students' innovation and entrepreneurship ability, which requires teachers to have rich experience in innovation and entrepreneurship. However, there is currently a shortage of teachers with practical experience in innovation and entrepreneurship, especially in logistics majors. Traditional education focuses on knowledge transfer and subject research, resulting in a relative lack of knowledge and experience in innovation and entrepreneurship practice among teachers. Without practical experience, it is difficult for teachers to impart practical skills and experience in innovation and entrepreneurship to students, which affects the in-depth integration and implementation of the "mass entrepreneurship" education and apprenticeship model.

The serious shortage of teachers in "mass entrepreneurship and innovation" education is also reflected in the lack of professional and ability training for teachers. Another problem is the lack of teacher training mechanisms and systems for innovation and entrepreneurship education." Mass entrepreneurship and innovation education requires teachers to have professional knowledge and abilities, including training of innovative thinking and entrepreneurial management skills. However, the current training and education of teachers mainly focus on the transfer of subject and curriculum knowledge, and there is a lack of specialized training and ability improvement opportunities for innovation and entrepreneurship education. As teachers lack professional knowledge and ability in innovation and entrepreneurship education, they are unable to effectively organize and implement teaching activities with characteristics of innovation and entrepreneurship, which limits the

development and improvement of teachers in "mass entrepreneurship" education [8].

4. A Perfect Path for the Integration of the Apprenticeship Model of Mass Innovation and Entrepreneurship Education in Logistics under the Background of the New Era

4.1. Change the Concept of Education and Actively Advocate Innovation and Entrepreneurship Education

Under the background of the new era, one of the ways to improve the integrated apprenticeship model of the dual innovation education for logistics majors is to change the educational concept and actively advocate innovation and entrepreneurship education. The following are two small views to demonstrate this view:

First, emphasize the core value of practice and innovation. To change the concept of education, practice and innovation should be emphasized as the core values of double innovation education for logistics majors. Traditional education usually lays emphasis on the teaching of theoretical knowledge, while the new era requires students to have the ability of innovation and entrepreneurship. Therefore, educational institutions and teachers should re-recognize the importance of innovation and entrepreneurship, promote the cultivation of practice and innovative thinking, and incorporate them into educational goals and curriculum design. In this way, students can be guided from passive acceptance to active practice, cultivate innovative thinking and problem-solving ability, and provide a broader practical platform for apprenticeship learning.

Secondly, an education system for innovation and entrepreneurship should be established. In order to effectively advocate innovation and entrepreneurship education, a sound education system needs to be established. Educational institutions should formulate guidelines and policies for innovation and entrepreneurship education, and clarify educational goals and training requirements. At the same time, a complete curriculum system for innovation and entrepreneurship education should be established, including theoretical study of innovation and entrepreneurship, practical courses, case analysis and guidance for students' entrepreneurship projects. In this way, systematic innovation and entrepreneurship education can be provided, so that students can gradually understand and master the elements and methods of entrepreneurship. In addition, the professional training and teaching ability of teachers should be strengthened to improve their professional quality and practical experience in innovation and entrepreneurship education, so as to better guide students in innovation and entrepreneurship learning [9].

By changing the educational concept and actively advocating innovation and entrepreneurship education, it can provide an effective path for the improvement of the apprenticeship model of logistics professional dual innovation education integration. The emphasis on the core values of practice and innovation can guide students from passive acceptance to active practice, and cultivate innovative thinking and problem-solving ability. Establishing an innovation and entrepreneurship education system can provide systematic innovation and entrepreneurship education and guide students to master the elements and

methods of innovation and entrepreneurship. Through these efforts, we can promote the effective implementation of the apprenticeship model of integration of mass innovation and entrepreneurship education for logistics majors, cultivate more talents with innovation and entrepreneurship ability, and adapt to the development needs of the new era.

4.2. Promote the Effective Integration of Innovation and Entrepreneurship Education with Professional Education

In the context of the new era, one of the ways to improve the integrated apprenticeship model of mass innovation and entrepreneurship education for logistics majors is to promote the effective integration of innovation and entrepreneurship education and professional education.

First, integrate innovation and entrepreneurship with professional knowledge. Innovation and entrepreneurship education and professional education are both important components of cultivating students' comprehensive abilities, and they should integrate and complement each other. Logistics students need to master professional knowledge and skills, while innovation and entrepreneurship education cultivates students' innovative thinking, entrepreneurial awareness and entrepreneurial ability. Therefore, educational institutions should integrate the curriculum and run innovation and entrepreneurship education through all levels of professional education. For example, innovation cases and entrepreneurial practices can be incorporated into professional courses to encourage students to use their professional knowledge to solve practical problems and open up innovative and entrepreneurial opportunities. In this way, students can obtain the cultivation of innovation and entrepreneurship in professional education and form the improvement of comprehensive ability.

Secondly, strengthen the practical links and internship opportunities. Innovation and entrepreneurship education needs to pay attention to practice and practical operation, while professional education also needs to consolidate the theoretical foundation through practice. To promote the effective integration of the two, educational institutions should strengthen the setting of practical links and the provision of professional internship opportunities. For example, innovation and entrepreneurship practice courses or programs can be organized to allow students to apply professional knowledge and develop innovation and entrepreneurship skills in practical operations. At the same time, close cooperative relationships can be established with enterprises and industries, and internship and employment opportunities can be provided, so that students can combine innovative and entrepreneurial knowledge with professional practice in the actual work environment. This will give students more opportunities to apply what they have learned about innovation and entrepreneurship to their actual work and gain practical experience.

4.3. Establish a Systematic Curriculum System of Innovation and Entrepreneurship Education

Establishing a systematic curriculum system of innovation and entrepreneurship education requires overall planning of innovation and entrepreneurship courses. The establishment of a systematic curriculum system of innovation and entrepreneurship education requires overall planning to

ensure the coherence and organic content of the curriculum. First of all, the curriculum objectives and specific requirements for cultivating students' innovation and entrepreneurship ability and literacy should be clearly defined. Then, according to students' knowledge level and ability development needs at different stages, a step-by-step innovation and entrepreneurship course system should be determined, including basic courses, expansion courses and professional courses [10]. In addition, it is necessary to make full use of interdisciplinary resources and provide a rich variety of elective courses, so that students can have access to cross-field innovation and entrepreneurship content in addition to professional knowledge. Through systematic course planning, the effective integration of innovation and entrepreneurship education with professional education can be ensured, and students' innovation and entrepreneurship literacy can be improved.

The establishment of a systematic curriculum system of innovation and entrepreneurship education needs to strengthen practice and case teaching. Innovation and entrepreneurship education needs to focus on practice and case teaching to help students apply theoretical knowledge to practical situations. When establishing a systematic curriculum system of innovation and entrepreneurship education, it is necessary to strengthen the setting of practical teaching links and pay attention to the introduction of real cases. For example, entrepreneurial practice activities, project competitions and enterprise cooperation practices can be organized so that students can experience the process of innovation and entrepreneurship and cultivate practical operation ability and teamwork spirit. At the same time, by introducing real cases of innovation and entrepreneurship, students can learn and analyze practical experiences of success and failure to improve their decision-making ability and innovative thinking. By strengthening practice and case teaching, students can better understand and master the actual operation of innovation and entrepreneurship, and provide a practical basis for the implementation of the integrated apprenticeship model of double innovation education for logistics majors.

By establishing a systematic curriculum system of innovation and entrepreneurship education, it can provide an effective path for the improvement of the integrated apprenticeship model of dual innovation education for logistics majors. Through overall planning of innovation and entrepreneurship courses, clear course objectives and course content, to ensure the organic integration of innovation and entrepreneurship education and professional education.

4.4. Increase the Teaching Staff and Provide Professional Training

First, we should increase the number of qualified teachers. In order to effectively promote the double innovation and innovation education of logistics, it is necessary to increase excellent teachers. This includes the follow-up training and recruitment of teachers. Educational institutions should actively expand teacher resources related to the field of innovation and entrepreneurship and recruit teachers with practical experience and industry background to enrich the practicability of mass entrepreneurship education for logistics majors [11]. In addition, professional training of teachers should be strengthened, training opportunities and platforms for innovation and entrepreneurship education should be provided to help teachers improve their knowledge and

teaching methods of innovation and entrepreneurship, and improve their professional level and ability in entrepreneurship and innovation education. By adding excellent teachers, the teaching quality and practical effect of mass innovation and entrepreneurship education for logistics majors can be improved.

Secondly, professional training and resource support should be provided. In order to support teachers' work in entrepreneurship and innovation education, educational institutions should provide relevant professional training and resource support. This includes training courses on innovation and entrepreneurship education, teacher exchanges and case studies. By attending these training courses, teachers can learn about the latest theories and practices of innovation and entrepreneurship, and update their knowledge and teaching methods. At the same time, educational institutions should also provide rich teaching resources, including innovation and entrepreneurship case banks, innovation and entrepreneurship practice platforms and teaching tools, to help teachers better organize and carry out mass entrepreneurship and entrepreneurship education. By providing professional training and resource support, teachers can improve their teaching level and work effectiveness in mass entrepreneurship and innovation education for logistics majors.

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