Construction and Implementation of a Digital System for Logistics Majors from the Perspective of Smart Education

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ARTICLE INFO	ABSTRACT

Background: Faced with the new demand for logistics engineering talents in the modern logistics industry's mathematical transformation and upgrading, building an applied logistics engineering talent training system that meets the requirements of the new era is a key task of current teaching reform.

Contribution: The contribution of this experiment is focuses on the current situation of school enterprise integration in school logistics engineering construction, and proposes a construction.

Method: This experiment using framework method to strengthen the logistics engineering profession, clarify integration goals, build targeted curriculum systems, establish assessment and evaluation frameworks, and improve the mechanism of industry education integration.

Results: The collaborative educational role of logistics professional construction and innovation and entrepreneurship education and cultivate more comprehensive logistics professionals. Based on this, this article will conduct a digital system for logistics majors from the perspective of smart education in vocational colleges under the background of intelligent logistics.

Conclusion: Curriculum construction is built on a dynamic and authentic practical process, which reflects the logical interaction between curriculum builders and courses, shifting understanding from project logic to subjective logic.

1. Introduction

In the era of mathematics, the role of big data is spreading, and almost all fields attach great importance to big data analysis, including logistics management, mainly because logistics management provides opportunities for real-time generation of large amounts of data [1]. With the rapid development of advanced network technology and Internet of Things technology, intelligent logistics traceability devices such as embedded sensors,

barcodes, and Radio Frequency Identification (RFID) have been widely used in logistics management. The degree of networking in logistics management is increasing, resulting in a large amount of real-time data, namely big data [2]. These massive, real-time, and incompletely structured data exceed the capabilities of traditional data management tools [3]. The logistics industry requires advanced data analysis techniques to extract valuable information from big data, in order to reduce logistics costs and improve logistics management efficiency. Improve customer service quality. The challenges faced by the logistics industry in the era of big data have put forward new requirements for students majoring in logistics management [4]. Mastering data processing technology has become an essential skill for students majoring in logistics management. Statistics is the science of collecting, organizing, and analyzing data. Statistics is one of the fundamental courses in data analysis and holds an important position in logistics management courses.

Smart education, with its data-driven and technological teaching methods, provides personalized learning and active participation opportunities for students, and more effective teaching tools and resources for teachers, playing an increasingly important role in school education. Traditional classroom learning activities are often teacher centered, with students passively receiving knowledge and lacking personalized teaching experiences. However, from the perspective of smart education, classroom learning activities in schools emphasize the full utilization of modern technology and educational resources, stimulating students' interest and initiative in learning through personalized, interactive, cooperative and other methods, and achieving the improvement of education and teaching quality. However, there are still many challenges in the practical process of smart education [5]. Therefore, exploring modern logistics management teaching in vocational colleges under the background of smart logistics is of great significance. This article explores the teaching reform of modern logistics management courses in vocational colleges under the background of smart logistics from four aspects: the significance of professional teaching reform, how to carry out professional teaching content reform, teaching method reform, and the guarantee mechanism for implementing reform.

2. Method

There are also some issues with intelligent logistics in the process of sustainable development. The framework can see in Figure 1. Firstly, the intelligence level of logistics enterprises is limited. Although many enterprises have fully utilized IoT technology, their scale is very limited, resulting in incomplete internal management system construction, inadequate implementation of management measures, difficulty in forming a unified management order for the development of the entire industry market, and certain limitations on the degree of openness. This has brought difficulties to the promotion of intelligent logistics models. In addition, some enterprises do not attach enough importance to the construction of smart logistics, and their level of intelligence is clearly limited. Secondly, an intelligent management mechanism has not yet been formed. The development and construction of smart logistics enterprises will involve multiple industries and fields. In order to promote the common development and management of multiple administrative departments, enterprises must timely break boundaries and break the impact of island phenomena on the overall management system construction.
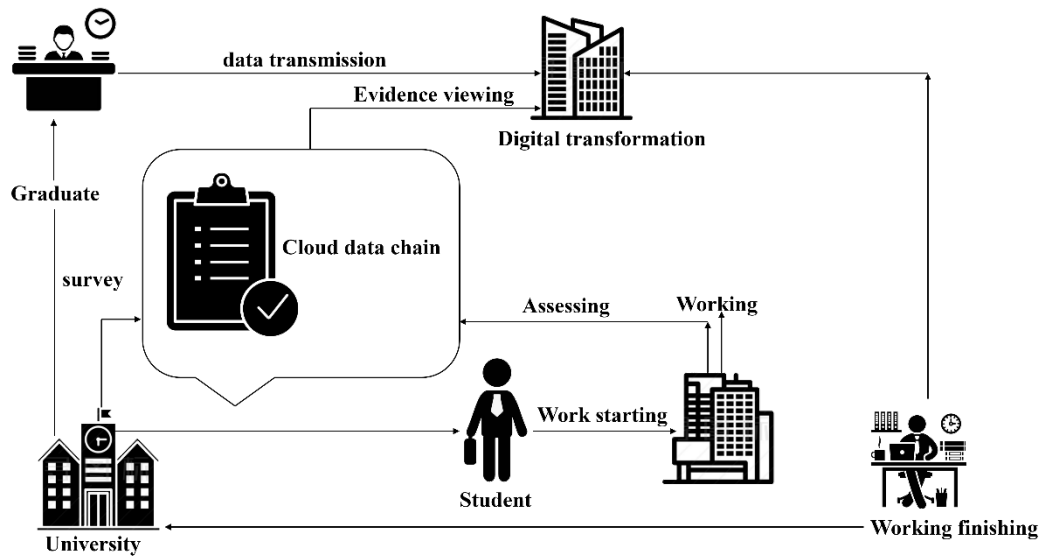
Figure 1. Framework diagram of Smart Cloud Chain

3. Result and Discussion

3.1. Insufficient development of intelligent logistics

At present, logistics management enterprises have not yet established an intelligent management mechanism, and their rights and responsibilities are not yet clear [6] Finally, the information standard system is incomplete, and the construction of information platforms is not comprehensive enough. In the construction of information standard system, enterprises need to achieve standardization and informatization in data interfaces, file formats, global positioning systems, electronic data exchange, and other aspects. In addition, enterprises should also introduce concepts that are suitable for their actual development in the construction of standard systems. Logistics enterprises should attach importance to the construction and improvement of information platforms, especially by utilizing automatic tracking systems for goods, electronic data exchange technology, radio frequency identification and other related information platform construction. There is a significant gap between Chinese logistics companies and foreign logistics companies, and relevant departments need to continue building intelligent logistics systems and platforms.

3.2. The impact of smart logistics on the teaching of logistics management courses in vocational colleges

In the reform of this major, influenced by smart logistics, there have been earth shaking changes in teaching content, teaching methods, and other aspects, which are reflected in the following two aspects: first, teachers need to integrate relevant knowledge points such as supply chain management ability and coordination and organization ability into the teaching content. In the process of promoting the development of smart logistics, teachers majoring in logistics management should understand that the entire logistics industry has entered the era of supply chain management, which means there is a significant talent gap related to it. Therefore, in the talent cultivation of vocational colleges, teachers should timely integrate the relevant content of intelligent operation of equipment into curriculum

teaching, so that students have a more comprehensive understanding and mastery of this ability, and can better adapt to their work requirements in future work. Improving the information application ability of vocational college students can promote the development of China's logistics industry towards intelligence. In the cultivation of professional talents, teachers need to pay attention to students' ability to apply and master information technology, especially in terms of mastering logistics management systems at the operational level [7]. Teachers should design teaching content to gradually enable students to master the management and practical operation of supply chain systems and resource planning systems [8]. In summary, smart logistics has had a significant impact on the teaching of logistics management courses in vocational colleges, and can also provide assistance for the reform of curriculum teaching in vocational colleges.

3.3. Technology roadmap

1) Construction of visual intelligent management network

    In the construction of a visual intelligent management network, it is possible to achieve the construction of a transportation goods resource monitoring, transportation vehicle positioning, and distribution visualization system based on RFID technology, GPS positioning technology, and sensing technology. At this stage, fully intelligent and networked systems have not yet been fully established, but more basic applications are already very common. Many logistics companies have established GPS systems, and some have also developed real-time temperature monitoring systems for food cold chains and GPS vehicle positioning systems. Realized the visualization, intelligence, and transparency of logistics production management.

2) Design of teaching content path of modern logistics management specialty in higher vocational colleges

    Most logistics companies require composite logistics technicians to have strong practical skills, proficient operating systems, comprehensive problem analysis skills, teamwork skills, and data analysis and processing abilities. This requires exploring new ideas for cultivating modern logistics management professionals. Based on demand orientation, school enterprise cooperation, and collaborative education that is close to job and professional standards, the modern logistics management talent cultivation model in vocational colleges is a more suitable talent cultivation model, which can achieve the integration of "curriculum system and job requirements, professional teaching standards and vocational skill level standards, teaching process and talent cultivation process". Overall path design; This is shown in Figure 2.
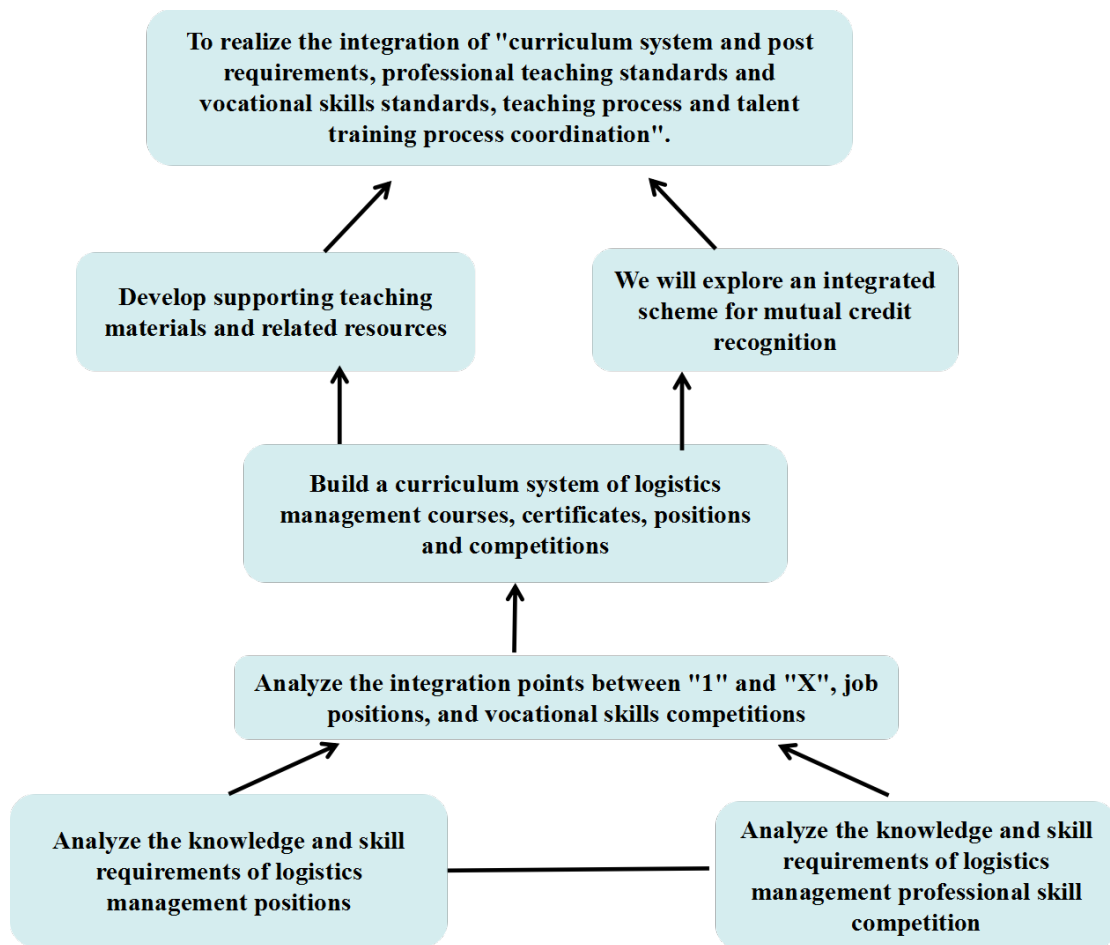
Figure 2. Framework diagram of the design of the teaching content of modern logistics management

Determine the integration mode of course certificate and post competition, and build an integrated course system. First of all, according to the logic of professional teaching content design, the person in charge of professional construction and the course team analyzed the knowledge and skill requirements of the modern logistics management one by one, interviewed logistics enterprises on the spot, collected and sorted out the knowledge and skill requirements of current logistics management positions for workers online, and analyzed the logistics management professional Vocational skills competitions require students to acquire knowledge and skills.

(1) No modification: Because the knowledge and skills involved in the existing course can meet the requirements of "certificate, position and competition", there is no need to modify.

(2) Content enhancement and repair: The knowledge and skills involved in the existing courses are basically consistent with certificates, positions, and competitions, and some knowledge points cannot be covered. Therefore, it is necessary to strengthen and repair the content. The content of "Introduction to the Development of Intelligent Logistics" has been extended and expanded in relevant courses.

(3) New courses: The existing courses are difficult to meet the requirements of certificates, positions, competitions, and other standards, and one or more courses need to be added.

(4) Reform of Teaching Methods for Modern Logistics Management in Vocational Colleges under the Background of Smart Logistics.

Information technology has a revolutionary impact on the development of education, and high-quality resources and advanced technology should be fully utilized to promote the construction of digital education. The construction of a teaching model based on the new constructivist BOPPPS, combined with VR virtual reality technology, can expand pre class and post class teaching, while allowing students to learn and construct meaning in simulated real scenes, with good immersion and interactivity, enhancing learning motivation [9].

The modern logistics education model of BOPPPS, emphasizes participatory teaching, the importance of real-life scenarios, and the collision of interactive thinking. The teaching curriculum is divided into introduction, objectivity, pre-test, interaction, posttest, and summary. This model emphasizes a student-centered and teacher led role. On this basis, combining the new constructivist BOPPPS virtual reality technology to construct a modern logistics management teaching model, This is shown in Figure 3.
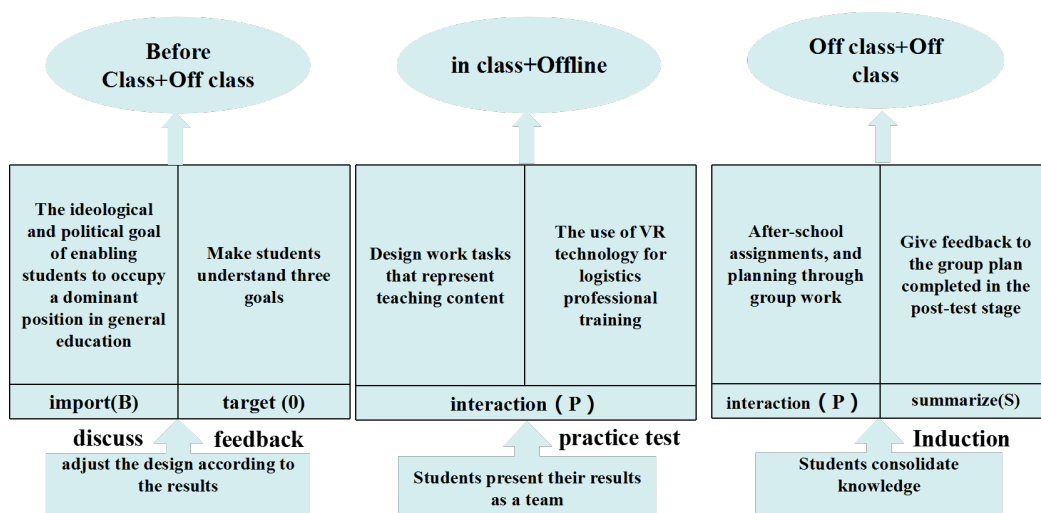

Figure 3. A new constructivist BOPPPS modern logistics teaching model integrated with VR technology

To achieve the teaching reform of the logistics management major mentioned above, it is necessary to have a sound internal guarantee mechanism, including a top-down organizational system divided by school level and a bottom-up governance system with diverse subject participation and cooperation [10]. In the bottom-up multi-party collaborative governance system, the mechanisms included mainly include resource guarantee mechanisms, dynamic adjustment mechanisms, incentive mechanisms, communication mechanisms, decision-making mechanisms, etc., reflecting the optimization needs of multi-party collaboration for teaching guarantee.

Through research, it was found that the majority of information is collected from men, who account for over 60%. The largest amount of information is collected from the IT department. About 50% of the labor force is collected in educational institutions. The study

found that the sample met the minimum requirement. Table 1 shows the successfully surveyed data.

Table 1 Users' Demographic Background

Profile	Style	Frequency	Percentage
	Male	253	66.3%
	Female	155	22.3%
Gender	Management Department	59	5.39%
	Administrative Department	60	6.01%

Establishing a scientific, comprehensive, and quantifiable evaluation system for professional innovation and integration can help universities effectively evaluate the effectiveness of the integration of professional education and innovation and entrepreneurship education [11] - [14]. The establishment of the "innovation integration" evaluation system for logistics management profession should follow the laws of innovation and entrepreneurship education and the characteristics of logistics management profession itself, adopt scientific indicator selection, and establish a comprehensive evaluation model of "knowledge+ability+quality"[15] - [20]. The degree of implementation of indicators such as knowledge, capability, and quality through the analysis of backend data in the model is shown in Figure4.
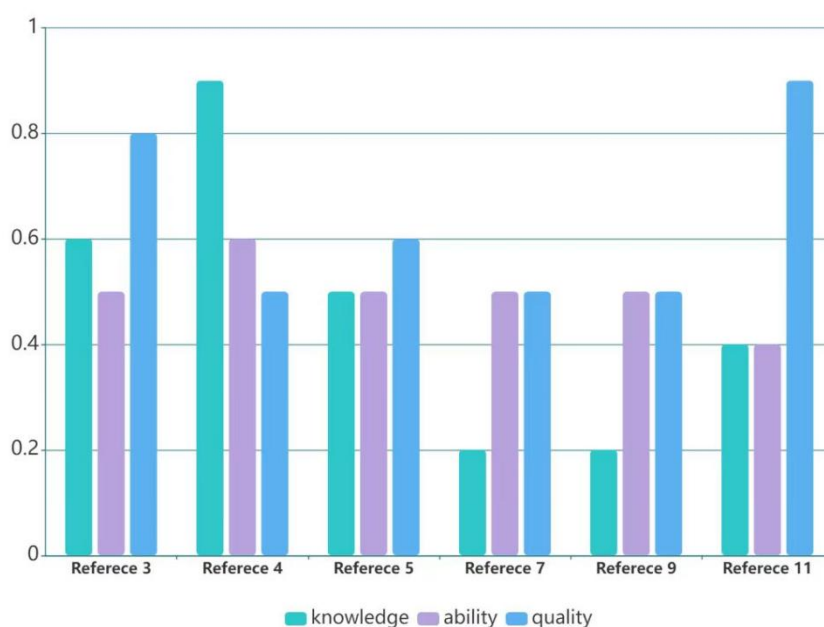

Figure 4. Learning performance under indicators such as knowledge, ability, and quality

4. Conclusion

Curriculum construction is built on a dynamic and authentic practical process, which reflects the logical interaction between curriculum builders and courses, shifting understanding from project logic to subjective logic. The construction of the curriculum system is the process of reconstructing the logic of the curriculum. In the context of the new liberal arts, the reform of the curriculum system for applying cost-effectiveness logistics engineering is a purposeful, planned, and organized social activity, which itself is a logical existence. It is based on the perspective of curriculum construction disciplines, and is based on the understanding of the needs of economic and social development and the individual development needs of learners. The optimization and organization of course knowledge is not simply combining course knowledge with several courses.

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