Educational and Humanities
ISSN Print: 3104-4352
ISSN Online: 3104-4360
CD ISSN: 3104-4379
https://doi.org/10.63313/EH.9034

Research on Curriculum Teaching Reform in Higher Vocational Education under the Context of Digital Intelligence—Taking the Course "Logistics Information Technology and Applications" as an Example

Youyuan Li*. Yan Chen
Wenzhou Polytechnic, Wenzhou 325035, China
Email: 593530703@qq.com

How to cite this paper: Li, Y. Y., & Chen, Y. (2025). Research on Curriculum Teaching Reform in Higher Vocational Education under the Context of Digital Intelligence—Taking the Course "Logistics Information Technology and Applications" as an Example. *Educational and Humanities*, 2(1), 65-71. ISSN Print: 3104-4352; ISSN Online: 3104-4360.
https://doi.org/10.63313/EH.9034
Published: 2025-12-24

Abstract

In order to meet the new demand for talent in the digital transformation of the logistics industry, and to solve the problems of disconnection between teaching and industry, as well as the solidification of teaching modes in logistics management majors in higher vocational education, this study takes the course "Logistics Information Technology and Application" as the object and explores the teaching reform path under the background of digitalization. Through literature research, industry investigation, empirical research, and other methods, analyze the characteristics of the curriculum and the current teaching situation, propose four teaching objectives of "strengthening theory, emphasizing practice, improving interest, and cultivating skills", construct an integrated teaching model of "curriculum research competition innovation", and implement strategies of "strengthening foundation, emphasizing practice, multi-dimensional evaluation, and good innovation". Through pre class preparation, integration of theory and practice during class, and post class expansion, the entire process design incorporates elements of digital teaching. The results indicate that the reform plan can effectively improve teaching quality, enhance students' job adaptability and innovation ability. The research results can provide practical reference for the digitalization reform of logistics courses in higher vocational education and enrich the teaching theory of vocational education.

Keywords

Digital Intelligence; Vocational courses; teaching reform; Logistics Information Technology and Application; Course Research Competition Creation

1. Introduction

In the current era of accelerated penetration of the digital economy, the iteration of technologies such as big data, the Internet of Things, and artificial intelligence is driving the logistics industry into the deep water zone of digital transformation. New formats such as unmanned warehouses, intelligent scheduling, and unmanned distribution are constantly emerging, which puts forward new requirements for the technical application ability, interdisciplinary thinking, and innovation literacy of logistics talents. As an important carrier for meeting industry demands, vocational education's curriculum system and teaching mode must actively adapt to industry changes in order to cultivate skilled talents who understand technology, are proficient in practical operations, and are good at innovation.

As a core course of modern logistics management, "Logistics Information Technology and Applications" is a key link between information technology and logistics practice, and its teaching quality directly affects the adaptability of talent cultivation. However, the current teaching of this course still faces many practical difficulties: the teaching content is disconnected from the practical application of logistics intelligence, the teaching mode is fixed in traditional theoretical lectures, and the evaluation system is difficult to comprehensively measure students' comprehensive abilities, resulting in a gap between students' job adaptation ability and industry demand. In this context, the country has successively issued policies such as the "Implementation Plan for National Vocational Education Reform" and the "Opinions on Deepening the Reform of Modern Vocational Education System Construction", which clearly propose to promote the deep integration of information technology and education teaching, and build a "student-centered" research-based teaching model.

Based on this, this study takes the digital transformation as the background of the times, focuses on the teaching reform of the course "Logistics Information Technology and Application", and combines with the educational positioning of "serving local industries" in vocational colleges. By analyzing the characteristics of the course and the current teaching situation, a "course research competition creation" integrated teaching mode and supporting implementation strategies are constructed, aiming to solve the current teaching problems, improve the quality of course teaching, provide practical reference for the digital reform of logistics courses in vocational colleges, and ultimately achieve precise docking between the training of skilled logistics talents and industry demand.

2. Analysis of the Teaching Status of the Course "Logistics Information Technology and Application" under the Background of Digitization

2.1. Transformation trend of course characteristics

The deep penetration of digital technology has driven a fundamental transformation in the course of "Logistics Information Technology and Applications". The curriculum has shifted from the traditional knowledge imparting model of "emphasizing

theory over practice" to a new form of "combining theory with practice" that focuses on data analysis, digital technology application, and interdisciplinary knowledge integration. Its core features are reflected in three aspects: firstly, the enhancement of technological relevance, which requires close integration with cutting-edge technologies such as big data, the Internet of Things, and artificial intelligence in logistics scenarios; Secondly, the emphasis is on practical orientation, which needs to meet the practical needs of new logistics formats such as unmanned warehouses and intelligent scheduling; Thirdly, there is an increased demand for job adaptability, which requires precise matching of the industry's comprehensive abilities in technical operations, problem-solving, and innovative thinking.

2.2. The core issues in current teaching

The update of course content lags behind the speed of digital transformation in the logistics industry, and there is a gap between some technical knowledge in traditional textbooks and practical applications in enterprises. The coverage of new formats such as unmanned distribution and intelligent warehouse management is insufficient. The teaching cases are mostly generic cases, lacking real scene support from regional logistics enterprises, which makes it difficult to meet the educational positioning of vocational colleges as "serving local industries", resulting in a low degree of adaptation between the knowledge learned by students and the actual needs of their positions.

The traditional mode of "theoretical lectures+simple practical operations" is still dominant, lacking the deep integration of digital teaching concepts. The use of digital teaching tools in the teaching process is superficial, and the interactive and immersive advantages of tools such as Learning Pass and virtual simulation platforms have not been fully utilized. The passive acceptance of knowledge by students has not fundamentally changed, and the cultivation of abilities such as independent exploration and project collaboration is insufficient, making it difficult to stimulate learning interest and innovative thinking.

The evaluation method mainly focuses on the final assessment, emphasizing the examination of theoretical knowledge and basic operational skills, lacking a comprehensive evaluation of students' technical application ability, project practice ability, and innovation ability. The evaluation indicators are single and have not formed a multidimensional evaluation system of "process evaluation+summative evaluation", "theoretical evaluation+practical evaluation", "self-evaluation+peer evaluation+enterprise evaluation", which cannot fully reflect students' comprehensive literacy and job adaptation ability.

3. Reform Measures for the Teaching of Logistics Information Technology and Applications under the Background of Digitization

3.1. Constructing a Four in One Teaching Model of "Course Research Competition Creation"

Course foundation: Refactoring the course content system, integrating application cases of big data, Internet of Things, and artificial intelligence in logistics scenarios, adding digital modules such as unmanned warehouse operation and intelligent scheduling system applications, and synchronously updating textbooks and teaching resources.

Empowering scientific research: Leveraging school enterprise cooperation resources, introducing enterprise real logistics digitization projects, guiding students to participate in research tasks such as data processing and system optimization, and cultivating problem-solving abilities.

Promoting learning through competition: aligning with logistics skills competition standards, integrating competition content into daily teaching, setting up competition specific training modules, encouraging students to participate in logistics digital skills competitions, and improving practical skills.

Innovation and Entrepreneurship: Build an innovation and entrepreneurship practice platform, support students to carry out creative design and project incubation around the pain points of logistics digitization, and strengthen the cultivation of innovative thinking and entrepreneurial abilities.

3.2. Implement the four-dimensional implementation strategy of "strengthening foundation, emphasizing practice, multi-dimensional evaluation, and good innovation"

[1] Strengthening the Foundation: Strengthening the Theory and Skill Foundation of Digitization.Adopting the "online preview+offline intensive lecture" mode, the pre learning resources of digital technology are pushed through the Learning Platform, and the classroom focuses on the analysis of core knowledge points and practical operation points.Build a hierarchical teaching system and set three levels of learning objectives for different basic students: basic layer (technology application), improvement layer (system optimization), and innovation layer (scheme design).

[2] Emphasizing Practice: Deepening the Teaching of Digital Intelligence Practice.Build a virtual simulation practice platform to simulate scenarios such as intelligent warehousing and unmanned delivery, allowing students to immerse themselves in the digital logistics operation process.Deepen school enterprise cooperation, establish off campus practice bases, arrange students to participate in enterprise digital logistics project internships, and accumulate practical experience in the job.Promote "project driven" teaching, using real logistics digitization projects as carriers, guiding students to complete the entire process of requirement analysis, scheme design, and implementation in groups.

[3] Multidimensional evaluation: improving the evaluation system of digital

teaching.Build an evaluation model that combines process evaluation and summative evaluation, with process evaluation accounting for 60%, covering dimensions such as online learning, classroom interaction, project practice, and competition participation.Introduce multiple evaluation subjects, combined with teacher evaluation, student self-evaluation, peer evaluation, and enterprise mentor evaluation, to comprehensively measure students' comprehensive abilities.Establish a digital evaluation index system, focusing on assessing core competencies such as technical application ability, project collaboration ability, and innovative design ability.

[4] Innovation oriented: Establishing a sound guarantee mechanism for teaching innovation.Establish a digital teaching team, regularly conduct training on new technologies and teaching methods, and enhance teachers' digital teaching abilities.Encourage teachers to transform scientific research achievements into teaching cases and develop digital teaching resource packages, including micro courses, virtual simulation courseware, project case libraries, etc.Establish a teaching feedback and iteration mechanism, collect feedback from teachers and students through channels such as Wenjuanxing and classroom feedback, and continuously optimize teaching content and methods.

3.3. Optimize the support system for digital teaching

Upgrade teaching hardware facilities, equip with intelligent training equipment and specialized software to ensure smooth implementation of practical teaching.

Build an online teaching platform, integrate learning resources, project tasks, evaluation and assessment functions, and achieve digital management of the entire teaching process.

Collaborate with enterprises and industry associations, introduce cutting-edge technology standards and job requirements, and ensure that teaching reform and industrial development are synchronized with each other.

4. Conclusion

4.1. The core pain points and transformation direction of curriculum teaching reform are clear

The digital transformation promotes the formation of new formats such as unmanned warehouses and intelligent scheduling in the logistics industry, which puts higher demands on the technical application, interdisciplinary integration, and innovation capabilities of talents. However, the current course of "Logistics Information Technology and Applications" has prominent problems such as a disconnect between teaching content and industry needs, a fixed teaching mode, a single evaluation system, and insufficient teachers' digital and intellectual literacy. The course has transformed from the traditional "emphasis on theory over practice" to a combination of theory and practice with "data analysis as the core, technology applica-

tion as the focus, and interdisciplinary integration as the support". Reform is imperative.

4.2. The integrated teaching mode of "class research competition creation" has practical feasibility

The four in one teaching model of "course research competition innovation" has been constructed, which achieves a deep integration of theoretical learning and practical application through a closed-loop design of course foundation building, scientific research empowerment, competition driven learning, and innovation and entrepreneurship closure. The four-dimensional implementation strategy of "strengthening the foundation, emphasizing practice, multi-dimensional evaluation, and good innovation" provides specific support from four dimensions: knowledge enhancement, deepening practice, evaluation optimization, and innovation guarantee, which can effectively solve traditional teaching problems.

4.3. Adapting the Reform Plan and Implementation Path to the Training Objectives of Higher Vocational Talents

Based on the full process design of pre class preview, in class internalization, and post class expansion, incorporating digital tools such as Learning Pass and virtual simulation platforms, combined with real projects and skill competition resources from school enterprise cooperation, the teaching implementation path is formed, which not only conforms to the cognitive laws of vocational college students, but also accurately matches the job requirements of regional logistics enterprises. This path achieves the four level teaching objectives of "strengthening theory, emphasizing practice, improving interest, and cultivating skills" through hierarchical teaching, project driven, and multi-dimensional evaluation.

4.4. The reform achievements have both practical value and promotional significance

The teaching model and implementation strategies proposed in the study have been empirically analyzed to effectively enhance students' technical application abilities, job adaptability, and innovative thinking. At the same time, they provide replicable practical samples for the digitalization reform of logistics courses in higher vocational education. The teaching standards, resource packages, and evaluation system formed through research have enriched the teaching theory in the field of vocational education logistics, and can provide theoretical support and practical references for the reform of other similar professional courses.

Acknowledgements

This is the research result of the 2025 Teaching Construction and Teaching Reform Research Project of Wenzhou Polytechnic, titled "Research on Teaching Reform of

Higher Vocational Courses under the Background of Digitization-Taking the Course of Logistics Information Technology and Application as an Example" (Project No. WZYYB202510).

References

[1] Qin Jing Research on the Path of Digitalization Transformation of Vocational Education Professional Courses from the Perspective of New Quality Productivity [J]. Modern Vocational Education, 2025, (01):149-152.

[2] Sun Liangjing, Han Lei Exploration of the Design and Construction Mode of Vocational Education Construction Engineering Practice Courses under Digital Transformation [J]. Stone, 2024, (12):139-141.DOI:10.14030/j.cnki.scaa.2024.0621.

[3] Cai Shu Research on the Teaching of Core Courses in E-commerce Major in Vocational Colleges Based on Digital Transformation [J]. Zhizhi, 2024, (22):81-84.

[4] Liao Shiyun The "Ideological and Political Leadership+Technological Empowerment" Digital Intelligence Upgrade Framework for Big Data and Accounting Major in Higher Vocational Education [J]. Modern Business and Industry, 2025, (08):162-164.DOI:10.19311/j.cnki.1672-3198.2025.08.052.

[5] Pulis Research on Teaching Reform of Big Data and Financial Management in Higher Vocational Education under the Background of Digitization [J]. Economist, 2025, (03):221-222+224.

[6] Guo Jialu Exploration and Practice of Blended Teaching in the Course of Logistics Information Technology and Application under the OBE Concept [J]. China Navigation Weekly, 2024, (49):75-77.

[7] Zhu Haipeng, Yu Guifang Exploration of the Application of Ideological and Political Teaching Design in the Course of Logistics Information Technology in Higher Vocational Education Based on ADDIE Model [J]. Logistics Technology, 2024, 47 (05): 170-174. DOI: 10.13714/j.cnki. 1002-3100.2024.05.045

[8] Zhang Xia Informationization Teaching Design of Core Courses in Logistics Management in Higher Vocational Education - Taking "Application of Logistics Information Technology" as an Example [J]. China Storage and Transportation, 2023, (08):62-63.DOI:10.16301/j.cnki.cn12-1204/f.2023.08.022.

[9] Ye Qian Research on Curriculum Reform and Practice of Higher Vocational Education Based on OBE Concept: Taking the Course of "Logistics Information Technology" as an Example [J]. China Navigation Weekly, 2022, (49):64-66.

[10] Hu Bing, Sun Zhixin Research on Teaching Reform of "Multidimensional and Stereoscopic" Course in Modern Logistics Information Technology [J]. Logistics Technology, 2022, 45 (12): 173-177. DOI: 10.13714/j.cnki. 1002-3100. 2022.12.040