Journal of Thai-Chinese Social Science
E-ISSN：3057-157X (Online)
https://so19.tci-thaijo.org/index.php/JTCSS/AboutJournal

Reconstruction of the Curriculum of New Business E-commerce Major in Applied Universities from the Perspective of Value Co-creation Theory: The Core Logic to Break the Disconnection between Skills and Application

Xiaojun Ke[1], Hongyan Chen[1*]
[1]Quanzhou University of Information Engineering, Fujian, Quanzhou, 362800.
E-mail: kexiaojun@qzuie.edu.cn (Correspondence)

Abstract: Against the backdrop of the digital economy, the e-commerce major in application-oriented universities needs to transform towards "digital intelligence and practicality". However, the problem of "disconnection between skills and application" is prominent, with the teaching of digital intelligence technologies being disconnected from the real business scenarios of e-commerce enterprises. Guided by the theory of value co-creation, this paper systematically examines the coupling mechanism between this theory and the reconstruction of e-commerce major courses, analyzing the research progress at both theoretical and practical levels, as well as the real issue of insufficient enterprise participation. From the three-dimensional perspective of "demand co-creation - course co-creation - evaluation co-creation", it distills the core logic for resolving the "disconnection between skills and application", providing theoretical support and a practical framework for the course reform of the e-commerce major in application-oriented universities, and helping to enhance the alignment between talent cultivation and the digital intelligence demands of enterprises.

Keywords: Value Co-creation Theory; Application-oriented Universities; New Business Studies; E-commerce Major; Course Reconstruction; Disconnection between Skills and Application

1. Introduction

The in-depth development of the digital economy is accelerating the transformation of new business education in application-oriented universities toward a focus on "digitalization and practicality." As a core field of new business, the e-commerce major needs to closely align with the strategic requirement of "deepening the integration of industry and education" in "China Education Modernization 2035", and cultivate e-commerce talents with digital skills and practical abilities to meet the needs of enterprises' digital transformation (Su & Liu, 2023). However, the current e-commerce major in application-oriented universities has a significant problem of "disconnection between skills and application", with digital technology teaching mostly limited to theoretical aspects such as Python data analysis and basic operation of AI tools, without deep integration with real business scenarios such as e-commerce promotion operations and intelligent inventory allocation (Hu, 2024; Pang et al., 2025; Tang et al., 2023). Moreover, course evaluations focus on theoretical tests and lack consideration of business value, resulting in students' acquired "skills" not matching the actual "application" needs of enterprises (Fang & Fang, 2022; Hu, 2024; Ni et al., 2020).

Value co-creation theory emphasizes that multiple subjects, such as universities and enterprises, achieve value win-win through resource sharing, complementary capabilities, and dynamic interaction, providing theoretical support and practical paths for the reconstruction of e-commerce major courses and solving the problem of "disconnection between skills and application" (Prahalad & Ramaswamy, 2004). Among them, the collaboration between universities and enterprises becomes the key breakthrough to connect courses with industries and solve the problem of "separation between learning and application" (Alam & Mohanty, 2022; Xi et al., 2022). This theory is highly consistent with the course reform direction of "digital empowerment and integration of industry and education" in new business-oriented universities. It can not only fill the practical gap in integrating digital technology with existing research courses but also provide systematic ideas for improving the quality of talent cultivation.

This study take the theory of value co-creation as the core perspective. Firstly, it will define core concepts, such as application-oriented universities, new business, and e-commerce majors, and clarify the logical fit between the theory of value co-creation and the reconstruction of e-commerce major courses. Secondly, it will review the research progress of e-commerce major course reconstruction from the perspective of value co-creation, and analyze the practical problems such as insufficient depth of enterprise participation, loose integration of theory and practice, and the absence of

dynamic adaptation mechanisms. Then, it will extract the core logic of solving the problem of "disconnection between skills and application" from three dimensions: demand co-creation, course co-creation, and evaluation co-creation. Finally, it will form systematic conclusions and future prospects, aiming to fill the gap in the review of the application path of the theory of value co-creation in the field of "integration of skills and application" in e-commerce courses, and provide a theoretical framework and practical solutions for the course reform of e-commerce major in application-oriented universities, to enhance the alignment between talent cultivation and the digital transformation needs of enterprises.

2. Core Concepts and Theoretical Foundations

Applied universities are positioned to cultivate application-oriented talents serving the regional economic and social development, emphasizing the deep integration of teaching and practice, and stressing the precise alignment of talent cultivation with the demands of industries and enterprises (He & Tang, 2025). These universities typically base their orientation on local industrial demands, emphasizing practicality and application in areas such as professional settings, course development, and teaching models (Jia, 2025; Liwei et al., 2024). They develop theoretical and practical learning platforms through school-enterprise cooperation and industry-education integration, enabling students to quickly adapt to job requirements after graduation. They are important bases for cultivating application-oriented talents in new business disciplines.

New business disciplines represent the transformation and upgrading of traditional business disciplines in the context of the digital economy and globalization, characterized by "digitalization, cross-border integration, and practicality (Syerov et al., 2024; Zekos, 2021)." They break away from the single theoretical teaching model of traditional business disciplines, deeply integrating digital technologies such as AI, big data, and cloud computing into business operations, including marketing, operations, and trade. They focus on cultivating students' digital skills, cross-border thinking, and practical abilities to meet the demands of the digital economy era for compound business talents, and provide innovative and practical professionals for fields like e-commerce and cross-border trade (Dong, 2023).

E-commerce is one of the core disciplines in new business studies, aiming to cultivate application-oriented talents who master e-commerce operations, data analysis, cross-border trade, and other knowledge and skills, and can work in e-commerce enterprises, internet platforms, and other institutions as digital operation specialists, data analysts, cross-border e-commerce specialists, etc (Xi & Ming, 2020; Zeng & Ding, 2020). With the advancement of digital transformation, this discipline needs to continuously incorporate digital technology content, strengthen the connection with real business scenarios of e-commerce enterprises, ensure that the course content keeps pace with industry development, and avoid the "disconnection between technology and application", making it a key carrier for

the "digital empowerment and industry-education integration" reform in new business studies (Hu, 2024; Volynets et al., 2024).

Course reconstruction refers to the systematic adjustment and optimization of a curriculum's content, structure, resources, teaching models, and evaluation systems, based on the changing demands of industry development and talent cultivation goals (Wang et al., 2023). For the e-commerce discipline, course reconstruction should be guided by the digital job demands of enterprises, break away from the traditional theory-dominated course framework, integrate digital technologies and real business scenarios, and build a "technology + business + practicality" integrated curriculum system. The core is to solve the "disconnection between technology and application" and achieve precise alignment between courses and enterprise demands.

"Disconnection between technology and application" specifically refers to the phenomenon of a gap between digital technology teaching and the real business demands of enterprises in the e-commerce discipline of applied universities. It is manifested as follows: digital technology teaching lacks the support of e-commerce business scenarios and remains at the level of tool operation; business teaching in business disciplines does not incorporate digital technology applications and still uses traditional teaching content (Zeng et al., 2022); course evaluations focus on theoretical knowledge assessment and ignore students' technical application abilities and contributions to enterprise business value, ultimately resulting in students' digital skills being unable to meet the actual job demands of e-commerce enterprises (Xue & Qian, 2025).

Value Co-creation Theory originated in the field of service science and has since been extended to the field of education (Prahalad & Ramaswamy, 2004). It refers to a theoretical framework where multiple subjects such as universities and enterprises act as equal partners, achieving mutual value creation through resource sharing (such as university faculty, teaching facilities, and enterprise projects, business data), complementary capabilities (such as the theoretical teaching advantages of universities and the practical experience of enterprises), and dynamic interaction (such as joint course development, collaborative teaching, and joint evaluation), to enhance the quality of talent cultivation and create business value for enterprises. It provides a core guiding ideology for solving the "disconnection between technology and application" in the course reconstruction of e-commerce disciplines.

The theory of value co-creation and the course reconstruction of e-commerce disciplines have multi-dimensional compatibility logic: from the perspective of "multi-subject collaboration", e-commerce courses have an urgent need for real business scenarios of enterprises. The deep involvement of enterprises in course construction can provide real-world business projects, such as major promotional operations and inventory allocation, thereby solving the problem of "no scenarios to rely on" in digital technology teaching. From the perspective of "resource integration and sharing", the joint development of AI

teaching robots, digital and intelligent training platforms, and other resources by schools and enterprises can make up for the shortage of digital and intelligent teaching resources in application-oriented universities, providing material support for the integration of skills and application. From the perspective of "dynamic interaction and feedback", the e-commerce industry has a fast iteration speed. Through the regular communication mechanism between schools and enterprises, the latest content, such as new regulations from e-commerce platforms and upgrades to AI recommendation algorithms, can be promptly incorporated into the curriculum, thereby avoiding a lag in course content behind industrial practice.

3. Research Progress and Practical Challenges in the Reconstruction of E-commerce Professional Courses from the Perspective of Value Co-creation

With the digital economy driving the transformation of e-commerce majors towards digital intelligence, the value co-creation theory, which emphasizes the sharing of resources and complementary capabilities between universities and enterprises, has become a core theoretical foundation for addressing the issue of disconnection between skills and applications in courses. Although certain research achievements have been made in applying this theory by the academic community and universities, there are still many practical obstacles due to factors such as the depth of university-enterprise collaboration and the practicality of the theory. This paper will first summarize the research progress from both theoretical and practical perspectives, then focus on the core issues to analyze the practical difficulties, and provide a basis for subsequent optimization.

3.1 Theoretical Research Progress

The academic community has generally recognized the guiding significance of the value co-creation theory in addressing the disconnection between skills and application in e-commerce majors, and has formed a preliminary theoretical framework of "demand - course - evaluation" three-dimensional co-creation. Existing research has clearly established the core position of university-enterprise collaboration in course reconstruction (Wei et al., 2025), proposing that joint research by universities and enterprises should be conducted to clarify the job competency requirements of digital intelligence in e-commerce, design course content based on job competencies, and involve enterprises in course evaluation to build a closed-loop system of "demand alignment - course development - evaluation feedback" (Lin et al., 2021; Su & Liu, 2023). At the same time, some studies have explored the combined application of the value co-creation theory with the DACUM course development method and action research method (Avila-Garzon & Bacca-Acosta, 2024), providing theoretical and methodological support for course reconstruction. It is believed that this theory can effectively connect university courses with enterprise demands and provide systematic ideas for integrating skills and applications.

3.2 Practical Research Progress

Some application-oriented universities have begun to explore the reconstruction of e-commerce professional courses based on the value co-creation theory, forming practical experiences that can be learned from. For instance, some universities have jointly developed core courses such as "Digital Intelligence Marketing Practice" and "E-commerce Supply Chain Data Decision-making" with e-commerce enterprises, breaking down real business projects of enterprises into teaching tasks; they have also introduced enterprise mentors to participate in teaching, implementing a "university teacher + enterprise mentor" dual-mentor system, where university teachers are responsible for the theoretical teaching of digital intelligence technology and enterprise mentors guide business practice; they have built digital intelligence training platforms and embedded enterprise business data, allowing students to apply digital intelligence tools to solve practical problems in simulated scenarios. Relevant research has confirmed that such practices can significantly enhance students' job adaptability and shorten their adaptation period in the workplace, preliminarily verifying the practical value of the value co-creation theory in addressing the disconnection between skills and application.

3.3 Practical Challenges

Currently, the reconstruction of e-commerce professional courses from the perspective of value co-creation still faces multiple challenges, which hinder the effective resolution of the disconnection between skills and application. The overall process has not yet formed a complete closed loop of "theory - practice - feedback".

3.3.1 Insufficient Depth of Enterprise Participation

Existing research primarily focuses on university-led course reforms, with enterprises typically limited to providing scattered cases or data, without fully participating in the entire process of course goal setting, content development, and evaluation (Marra et al., 2022; Wei et al., 2025). This results in the combination of courses and enterprise demands remaining superficial, making it difficult to truly integrate skills and applications. University-enterprise collaboration is still at the stage of "formal cooperation", unable to fully leverage the advantages of enterprises in business scenarios and practical experience.

3.3.2 Inadequate Integration of Theory and Practice

Some studies' application of the value co-creation theory remains at the conceptual level, without forming concrete course reconstruction paths in line with the characteristics of the e-commerce major, such as rapid industry iteration and diverse scenarios. For example, no differentiated co-creation plans have been designed for sub-sectors such as cross-border e-commerce and live-streaming e-commerce (Chen et al., 2025), nor has the integration ratio of digital intelligence technology with various e-commerce business scenarios been clearly defined (Chau et al., 2025). The theoretical guidance lacks practical operability and is difficult to directly apply.

3.3.3 Absence of Dynamic

Adaptation Mechanism

Existing research on course reconstruction for e-commerce digital intelligence technology lacks an effective mechanism for dynamic content updates, with the update speed of course content lagging behind industrial practice (Zhang, 2025). Most courses still rely on fixed textbooks and teaching plans, failing to incorporate the latest regulations of e-commerce platforms and innovations in digital tools in a timely manner (Singun, 2025; Xiao et al., 2024). This leads to a recurring problem of a disconnect between skills and practical application, making it difficult to meet the long-term demands of enterprises.

4. From the perspective of value co-creation, the reconfiguration of e-commerce professional courses to address the core logic of "disconnection between technology and application"

The key to solving the "disconnection between technology and application" in e-commerce professional courses lies in establishing a closed-loop system of deep collaboration between "universities and enterprises". Through the progressive logic of "demand anchoring - content integration - evaluation feedback", it achieves precise alignment between digital and intelligent technology teaching and e-commerce business scenarios. This logic starts from "solving real industry needs" and aims to "cultivate job-appropriate skills". Through co-creation in the three dimensions of demand, curriculum, and evaluation, enterprise resources are fully integrated into the entire course process, eliminating the phenomenon of "separation between learning and application" at its root. The following is a detailed breakdown of the core paths of each dimension:

4.1 Demand Co-Creation: Precise Anchoring of E-commerce Digitalization Positioning Skills

The joint research mechanism between universities and e-commerce enterprises is the foundation of demand co-creation (Gómez-Aguayo et al., 2024). Universities need to establish regular research cooperation with e-commerce enterprises, jointly conducting analyses of demand for core positions such as digital operations and data analysts. The research needs to cover all dimensions of digitalization capabilities, including the application of AI tools (such as Python data analysis, AI visualization tool operation), business scenario adaptation (such as AI traffic analysis for large-scale promotion activities, intelligent inventory digitization allocation), and problem innovation resolution (such as optimization of e-commerce operation plans based on AI); at the same time, relying on industry associations to integrate the needs of multiple enterprises, forming a universal list of job capabilities, avoiding "closed-door" course design, and providing a precise basis for course reconfiguration.

The transformation of position capabilities into course goals is the key step of demand co-creation, and it requires the use of the DACUM course development method to break down the digitalization position capabilities identified through research into specific, measurable course goals for e-commerce majors (Killian et al., 2024). For example, "the ability to analyze AI

traffic for large-scale promotions" is transformed into the specific goal in the "Digitalization Marketing Practical Operations" course of "being able to use AI tools to analyze the sources of promotion traffic, predict peak traffic, and formulate traffic optimization strategies", and "the ability to manage inventory digitization" is transformed into the goal in the "E-commerce Supply Chain Data Decision-making" course of "being able to analyze inventory data using AI algorithms, formulate intelligent replenishment plans, and reduce inventory costs", forming a precise mapping of "position capabilities - course goals" to ensure that course teaching does not deviate from the actual needs of enterprises.

Course pain point diagnosis is a crucial outcome of demand co-creation, and it necessitates utilizing the position capability model as a benchmark to systematically analyze the "disconnection between technology and application" problems in existing e-commerce professional courses (Chun-Yi et al., 2021; Xu et al., 2021). For example, for the "E-commerce Overview" course, diagnose whether the digital technology cases are outdated and whether they cover the latest practices of enterprises; for the "E-commerce Data Analysis" course, check whether there is a lack of support from real enterprise data sets and insufficient integration with business scenarios; for the "Cross-border E-commerce Practice" course, assess whether AI compliance declaration and intelligent logistics content are integrated; through diagnosis, form a course pain point portrait, to provide a targeted direction for subsequent course reconfiguration, ensuring that the reform is targeted.

4.2 Course Co-Creation: Content Reconfiguration of "Digital Technology + E-commerce Business"

Core course joint development is the core of course co-creation (Killian et al., 2024). Universities and enterprises need to jointly determine the core curriculum system of e-commerce majors, focusing on "digitalization and practicality" needs, and prioritize the development of courses such as "Digitalization Marketing Practical Operations", "E-commerce Supply Chain Data Decision-making", and "Cross-border E-commerce AI Compliance". During the development process, enterprise real business projects need to be decomposed into teaching tasks to be integrated into the course modules. For example, the promotion planning project of an e-commerce enterprise is decomposed into "promotion goal setting - AI traffic prediction - plan design - effect analysis" as teaching tasks, and the inventory digitization allocation project is decomposed into "inventory data collection - AI demand prediction - replenishment plan formulation - effect evaluation" tasks, allowing students to simultaneously master digital technology and e-commerce business in the process of completing tasks.

Collaborative construction of teaching resources is an important support for course co-creation (Killian et al., 2024). Schools and enterprises should jointly develop a "digitalized and intelligent e-commerce course resource package", which includes course outlines, digitalized teaching plans, collections of real enterprise cases,

datasets of e-commerce business, and AI teaching robots. The course outline should clearly define the proportion of integration of digital technologies and business content; the digitalized teaching plan should incorporate enterprise practical operation videos and case analyses; the collection of enterprise cases should include different scenarios of digitalized application cases (such as AI operation strategies for different categories of e-commerce); the AI teaching robot should have the functions of intelligently pushing practical resources of digital tools and answering students' questions in real time, and through resource integration, achieve a deep binding of "digital tools teaching" and "e-commerce business scenarios".

Innovation in teaching mode is a guarantee for course co-creation (Oliveira et al., 2024), and a "college teacher + enterprise mentor" dual-mentor system should be implemented, clarifying the responsibilities and collaboration mechanisms of both parties. College teachers are responsible for the theoretical teaching of digital technologies and the construction of the course framework, helping students establish a systematic theoretical foundation; enterprise mentors focus on practical operation guidance in e-commerce, combining their own work experience to guide students to use AI tools to solve actual business problems, such as optimizing e-commerce product recommendation strategies and analyzing user profiling data. At the same time, a three-stage teaching process of "theoretical teaching + practical training + project practice" should be adopted, with the theoretical teaching phase led by college teachers, the practical training phase carried out on the basis of digitalized platforms, and the project practice phase led by enterprise mentors for students to complete real projects, ensuring that the teaching of "skills" and the "application" scenarios are advanced simultaneously.

4.3 Evaluation Co-creation: Construction of a Multi-Dimensional Quantitative Evaluation System for E-commerce Courses

The design of evaluation indicators should overcome the limitations of traditional theoretical assessments and establish a multidimensional quantitative indicator system centered on "digital skills mastery, project practice effectiveness, and enterprise business contribution." Digital skills mastery can be measured by the accuracy rate of digital tool operations (such as the correctness rate of Python e-commerce data processing and the completeness of AI visualization results), and the proficiency of technology application (such as the duration of completing an AI operation plan); project practice effectiveness can be evaluated by the project conversion rate (such as the actual conversion improvement rate of e-commerce promotion plans) and the innovativeness of the plan (such as the uniqueness of AI optimization strategies); enterprise business contribution requires the introduction of enterprise business data, such as the proportion of inventory cost reduction (the actual effectiveness of inventory optimization projects) and the compliance passing rate of cross-border trade (the results of AI compliance declaration projects), ensuring that the

evaluation indicators can not only reflect students' abilities but also reflect the actual value to the enterprise.

Collaboration between evaluation subjects is key to ensuring the objectivity of the evaluation, and a "college + enterprise" dual-subject evaluation mechanism should be established, clarifying the evaluation priorities and weights of both parties. Colleges focus on the evaluation of digital skills and theoretical application, scoring based on students' technical operation results and theoretical homework completion, accounting for approximately 40%-50%; enterprises evaluate the value of students' projects to actual operations based on business standards, such as the feasibility of the project plan and the improvement effect on enterprise costs or efficiency, accounting for approximately 50%-60%. At the same time, industry associations should be invited to provide industry standards for reference, ensuring that the evaluation results align with both teaching norms and industry reality, thereby avoiding the problem of "useless evaluation" caused by a single evaluation subject.

Optimizing evaluation result feedback is crucial for achieving continuous improvement of the course, and a linkage mechanism between evaluation data and course adjustments should be established. After class, systematic analysis of evaluation data should be conducted to identify weak links in the course, such as students' deficiencies in AI inventory optimization technology application or the disconnection between course content and the latest e-commerce platform rules; based on the analysis results, the course content should be updated dynamically, such as adding advanced modules like e-commerce live-streaming digitalized operation and AI compliance for cross-border trade, and adjusting the depth and breadth of digital technology teaching; At the same time, optimize teaching resources and models, such as updating the enterprise case collection, adjusting the teaching division of the dual-mentors, and through continuous iteration, narrow the gap between "skills" and "application".

5. Conclusion and Future Prospects

The value co-creation theory, through the three-dimensional logic of "demand co-creation - curriculum co-creation - evaluation co-creation", provides a systematic solution for the "technological disconnection" problem in the e-commerce courses of applied universities. Its core lies in establishing an equal collaborative relationship between universities and enterprises, allowing enterprises to deeply participate in the entire course process and achieve resource sharing and capability complementarity. The reconfiguration of e-commerce courses needs to closely adhere to the integration essence of "digital technology + e-commerce business", using real enterprise projects as a link, embedding digital skills teaching into business scenarios, so as to truly achieve "learning and application synchronization". The existing research results on industry-academia integration courses (such as collaborative development between schools and enterprises, multi-dimensional evaluation) provide important references for the application of the value

co-creation theory in e-commerce courses, but further strengthening the depth of enterprise participation, improving the combination mechanism between theory and practice, and establishing a dynamic adaptation system for courses are still needed to more effectively solve the problem of "technological disconnection".

Future research can be deepened in three aspects: First, deepen the research on the enterprise participation mechanism, explore the "benefit sharing, responsibility sharing" guarantee mechanism for school-enterprise collaboration, such as clarifying enterprise benefits through project outcome ownership agreements, establishing talent transmission channels to enhance enterprise enthusiasm, and ensuring long-term and deep participation of enterprises in course reconfiguration; Second, focus on the reconfiguration of specialized courses, for the e-commerce major's cross-border e-commerce, live-streaming e-commerce, etc., combine different scenario characteristics (such as RCEP compliance requirements for cross-border trade, traffic operation logic for live-streaming e-commerce), design differentiated value co-creation course paths; Third, build a dynamic course update system, study the rapid update mechanism of course content and resources under the background of digital technology iteration, such as establishing a three-party linkage course content dynamic adjustment group of "university - enterprise - industry association", regularly reviewing industry demands and technological changes to ensure that courses always keep pace with the digitalization needs of enterprises.

References

Alam, A., & Mohanty, A. (2022). Business Models, Business Strategies, and Innovations in EdTech Companies: Integration of Learning Analytics and Artificial Intelligence in Higher Education. *2022 IEEE 6th Conference on Information and Communication Technology (CICT),* 1-6. https://doi.org/10.1109/CICT56698.2022.9997887

Avila-Garzon, C., & Bacca-Acosta, J. (2024). Thirty years of Research and methodologies in Value Co-creation and Co-design. *Sustainability*, *16*(6), 2360. https://doi.org/10.3390/su16062360

Chau, H. K. L., Ngo, T. T. A., Bui, C. T., & Tran, N. P. N. (2025). Human-AI interaction in E-Commerce: The impact of AI-powered customer service on user experience and decision-making. *Computers in Human Behavior Reports*, *19*, 100725. https://doi.org/10.1016/j.chbr.2025.100725

Chen, Y., Wang, Q., & Zhang, J. (2025). The role of cross-border E-commerce platforms in the digital economy: empower firms to gain global market insights to increase global competitiveness. *Journal of Digital Management*, *1*(1), 4. https://doi.org/10.1007/s44362-024-00003-0

Chun-Yi, L., Zhao, X., Gao, C., & Tsai, S.-B. (2021). Research on the Training Model of E-Commerce Professionals Based on Big Data Analysis. *Wireless Communications & Mobile Computing (Online)*, *2021*,9. https://doi.org/10.1155/2021/2030991

Dong, Y. (2023). Practice Teaching: A Perspective from Cross-border E-commerce in China. *Proceedings of the 7th International Conference on Education and Multimedia Technology,* 321-326. https://doi.org/10.1145/3616712.3616778

Fang, Y. S., & Fang, L. C. (2022). A Review of Chinese E-Commerce Research: 2001–2020. *IEEE Access*, *10*, 49015-49027. https://doi.org/10.1109/ACCESS.2022.3172433

Gómez-Aguayo, A. M., Azagra-Caro, J. M., & Benito-Amat, C. (2024). The steady effect of knowledge co-creation with universities on business scientific impact throughout the economic cycle. *Scientometrics*, *129*(5), 2771-2799. https://doi.org/10.1007/s11192-024-04986-5

He, L., & Tang, L. (2025). A brief study on the cultivation of talents for application-oriented undergraduate colleges and universities. *Australian Journal of Electrical and Electronics Engineering*, 1-10. https://doi.org/10.1080/1448837X.2025.2498789

Hu, J. (2024). The Construction and Optimization of the Cross-border E-commerce Practical Teaching System from the Perspective of Industry-Education Integration. *International Journal of Educational Teaching and Research*, *1*(3),6. https://doi.org/10.70767/ijetr.v1i3.386

Jia, R. (2025). Practical application and industry relevance: the role of off-campus training in student skill development. *Education and Information Technologies*, *30*(11), 15719-15755. https://doi.org/10.1007/s10639-025-13408-9

Killian, G., McClure, T., & Smith, S. (2024). Course Projects As Value Co-Creation Tools: Developing University Collaboration Opportunities. *Marketing Education Review*, *34*(1), 44-59. https://doi.org/10.1080/10528008.2023.2253799

Lin, C.-Y., Xi, Z., Gao, C., & Tsai, S.-B. (2021). Research on the Training Model of E-Commerce Professionals Based on Big Data Analysis. *Wireless Communications and Mobile Computing*, *2021*(1), 2030991. https://doi.org/10.1155/2021/2030991

Liwei, Y., Chunchen, Y., Ting, H., Jingting, C., Chenchen, S., & Jialing, L. (2024). Collaborative industry-academia integration in local undergraduate institutions: Establishing practical education bases. *International Journal of Science and Engineering Applications,* *13*(10),19-21.

https://doi.org/10.7753/IJSEA1310.1004

Marra, M., Alfano, V., & Celentano, R. M. (2022). Assessing university-business collaborations for moderate innovators: Implications for university-led innovation policy evaluation. *Evaluation and Program Planning*, *95*, 102170. https://doi.org/10.1016/j.evalprogplan.2022.102170

Ni, W., X, Y., & Ming, L. U. O. (2020). Research and Practice of Online Course Design of Cross-border E-commerce or Application-oriented Undergraduate. *2020 International Conference on Big Data and Informatization Education (ICBDIE),* 153-158.https://doi.org/10.1109/ICBDIE50010.2020.00042

Oliveira, T., Alves, H., & Leitão, J. (2024). Co-creation and innovation in higher education institutions: a systematic literature review and research agenda. *International Journal of Educational Management*, *38*(3), 839-872. https://doi.org/10.1108/IJEM-09-2023-0456

Pang, D., Wang, S., Ge, D., Lin, W., Kang, Y., & Li, R. (2025). RETRACTED ARTICLE: Enhancing E-commerce Management with Machine Learning and Internet of Things: Design and Development. *Journal of the Knowledge Economy*, *16*(1), 290-316. https://doi.org/10.1007/s13132-024-01969-y

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, *18*(3), 5-14. https://doi.org/10.1002/dir.20015

Singun, A., Jr. (2025). Unveiling the barriers to digital transformation in higher education institutions: a systematic literature review. *Discover Education*, *4*(1), 37. https://doi.org/10.1007/s44217-025-00430-9

Su, L., & Liu, K. (2023). Transformation and Innovation of E-Commerce Talent Training in the Era of Artificial Intelligence. *Advances in Artificial Systems for Logistics Engineering III*, 801-810. https://doi.org/10.1007/978-3-031-36115-9_71

Syerov, Y., Mykhalchyshyn, N., Hoshovska, O., Trevoho, O., & Skvortsov, D. (2024). Influence of the State on Cross-border Trade Management in Commercial Global Digitalization. *Data-Centric Business and Applications: Advancements in Information and Knowledge Management,2*,393-421. https://doi.org/10.1007/978-3-031-59131-0_18

Tang, Y. M., Chau, K. Y., Lau, Y.-y., & Zheng, Z. (2023). Data-intensive inventory forecasting with artificial intelligence models for cross-border e-commerce service automation. *Applied Sciences*, *13*(5), 3051. https://doi.org/10.3390/app13053051

Volynets, V., Lohvynenko, V., Korobka, S., Kuzmenko, O., & Derhaliuk, M. (2024). E-commerce development: Prospects and legal challenges of business digital transformation amidst economic de-shadowing. *Multidisciplinary Reviews*, *8,* 2024spe053. https://doi.org/10.31893/multirev.2024spe053

Wang, S., Meng, J., Xie, Y., Jiang, L., Ding, H., & Shao, X. (2023). Reference training system for intelligent manufacturing talent education: platform construction and curriculum development. *Journal of Intelligent Manufacturing*, *34*(3), 1125-1164. https://doi.org/10.1007/s10845-021-01838-4

Wei, L., Chen, Y., & Huang, Y. (2025). Exploring the effects of joint university–enterprise training on the professional identity and innovative capacity of engineering graduate students: based on a systematic literature review and meta-analytic approach. *European Journal of Engineering Education*, 1-27. https://doi.org/10.1080/03043797.2025.2527969

Xi, Y., & Ming, L. U. O. (2020). Research on the talent training mode of Application- oriented Undergraduate Cross-border e-commerce Innovation and Entrepreneurship Education. *2020 International Conference on Big Data and Informatization Education (ICBDIE),* 119-122.https://doi.org/10.1109/ICBDIE50010.2020.00034

Xi, Y., Shen, H., & Chen, X. (2022). Bridging the Gap between University Engineering Education and Enterprise Requirements. *Mobile Networks and Applications*, *27*(3), 1209-1217. https://doi.org/10.1007/s11036-022-01947-1

Xiao, J., Xu, Z., Xiao, A., Wang, X., & Skare, M. (2024). Overcoming barriers and seizing opportunities in the innovative adoption of next-generation digital technologies. *Journal of Innovation & Knowledge*, *9*(4), 100622. https://doi.org/10.1016/j.jik.2024.100622

Xu, J., Ma, Y., & Sar, K. (2021). Teaching Improvement Strategies on E-Commerce and Logistics Module of Application-Oriented Undergraduate International Trade Training Program. *2021 2nd Asia-Pacific Conference on Image Processing, Electronics and Computers,* 721-725. https://doi.org/10.1145/3452446.3452620

Xue, C., & Qian, L. (2025). Analysis of skills demand for live e-commerce talents based on China's online recruitment data. *Journal of Current Social Issues Studies*, *2*(7), 370-379. https://doi.org/10.71113/JCSIS.v2i7.340

Zekos, G. I. (2021). E-Globalization and Digital Economy. *Economics and Law of Artificial Intelligence: Finance, Economic Impacts, Risk Management and*

Governance,13-66. https://doi.org/10.1007/978-3-030-64254-9_2

Zeng, D., & Ding, J. (2020). Discussion on the Training of Cross-border E-commerce Application Talents Based on the Internet Era.*The 2020 International Conference on Machine Learning and Big Data Analytics for IoT Security and Privacy,* 271-276. https://doi.org/10.1007/978-3-030-62743-0_38

Zeng, M., Zheng, Y., Tian, Y., & Jebbouri, A. (2022). Rural e-commerce entrepreneurship education in higher education institutions: Model construction via empirical analysis. *Sustainability*, *14*(17), 10854. https://doi.org/10.3390/su141710854

Zhang, Y. (2025). Research on Vocational Education Practice Teaching Mode under the Background of “internet plus”. *International Journal of Web-Based Learning and Teaching Technologies*, *20*(1), 1-18. https://doi.org/10.4018/IJWLTT.382589