International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 10 Issue 4, Jul-Aug 2026 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

# Integration of Science and Education-Team Building and Educational Outcomes of a Specialized Big Data Talent Development Team in Logistics: A Case Study of Beijing Wuzi University

**Ju Hongmei, Jiang Tao, Qi Fenghua**

School of Systems Science and Statistics, Beijing University of Commerce, Beijing, China

## ABSTRACT

In the context of the digital economy and industrial digital transformation, the circulation industry continues to see escalating demand for big-data–oriented, multidisciplinary talents. Consequently, the development of interdisciplinary faculty teams has become a key support for enhancing the quality of talent cultivation in new engineering programs. This paper takes the big-data education team at Beijing University of Commerce as a case study. Grounded in the university's distinctive features in circulation-related education, and centered on the core construction philosophy of "integration of science and education with tiered collaborative efforts," the paper analyzes the team's organizational structure from three dimensions: personnel echelon, academic background composition, and functional positioning. It systematically elaborates on four operational mechanisms: mentorship and knowledge transfer by renowned scholars, bidirectional integration of teaching and research, co-creation of interdisciplinary courses, and the integration of industry and competitions into education. The team's development not only empowers undergraduate talent cultivation but also supports the development of advanced graduate courses and fosters students' innovation capabilities, thus forming an integrated undergraduate-and-graduate education framework. By drawing on practical achievements across multiple dimensions-including faculty development, curriculum design, student scientific and technological innovation, and employment and further education-this paper summarizes the construction path and experiences of big-data education teams at local universities specializing in circulation-related fields. The study shows that a well-organized age and discipline echelon is the foundation for the team's sustainable development; the integration of science and education is crucial for enhancing the depth and quality of teaching; and industry-specific characteristics are the core driving force behind the differentiated development of local institutions. These insights can serve as practical references for similar institutions seeking to build interdisciplinary teaching teams.

***How to cite this paper:*** Ju Hongmei | Jiang Tao | Qi Fenghua "Integration of Science and Education-Team Building and Educational Outcomes of a Specialized Big Data Talent Development Team in Logistics: A Case Study of Beijing Wuzi University" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-10 | Issue-4, August 2026, pp.866-874, URL: www.ijtsrd.com/papers/ijtsrd142084.pdf

IJTSRD142084



***KEYWORDS:*** *Big Data Education Team; Tiered Collaboration; Integration of Science and Education; Distinctive Circulation Model; Undergraduate-Graduate Integrated Program.*

## I. INTRODUCTION

Against the backdrop of the comprehensive advancement of the Digital China strategy and the deep integration of artificial intelligence technologies into various industries, digital transformation is accelerating in fields such as smart logistics, supply-chain finance, and commodity circulation. As a result, the industry is increasingly in urgent need of versatile, innovative talents who possess both big-data technology expertise and a deep understanding of the circulation sector-and the demand for such talent is gradually expanding from the undergraduate to the graduate level[1]. As a quintessential interdisciplinary engineering program, data science and big-data technology rely heavily on well-

structured, integrated teaching and research-based grassroots teaching organizations to ensure high-quality talent cultivation. A high-caliber faculty team serves as the core vehicle for guaranteeing the quality of program development and effectively implementing the goal of integrated undergraduate-and-graduate education[2].

Currently, the development of big data programs in Chinese universities generally faces several challenges, including a single disciplinary background among faculty members, a disconnect between teaching and research, insufficient mechanisms for knowledge transfer between senior and junior faculty, and inadequate depth of industry integration. In particular, local universities with distinctive industry orientations exhibit significant shortcomings in areas such as cultivating interdisciplinary faculty, integrating research and teaching resources, and ensuring smooth articulation between undergraduate and graduate curricula [3]. In the "Guiding Opinions on Strengthening the Reform of University Faculty Development in the New Era," issued jointly by the Ministry of Education and five other departments, it is explicitly stated that we must strengthen the construction of grassroots teaching organizations, improve the mentorship system involving senior, mid-career, and young faculty, promote the deep integration of research and teaching, build high-level teaching innovation teams, and comprehensively advance the integrated development of undergraduate and graduate education [4-5]. As for institutions whose primary focus is the circulation industry,

For specialized local universities, how to leverage industry resources to build a faculty team that supports the development of interdisciplinary programs-while simultaneously cultivating both undergraduate application-oriented talents and graduate-level innovative talent-is an urgent practical issue that needs to be explored in the context of the new engineering education initiative [6].

As an application-oriented undergraduate institution specializing in distribution and logistics, Beijing University of Commerce established the major in Data Science and Big Data Technology in 2019 and simultaneously set up a dedicated faculty team. Grounded in the university's strong tradition in distribution education, the team adopts a core development strategy centered on "integrating science and education with collaborative team building." It has assembled a faculty composed entirely of doctoral-level scholars, featuring multidisciplinary cross-fertilization and a well-structured, multigenerational cadre that seamlessly connects senior, mid-career, and junior faculty members. This has enabled the team to create a comprehensive, end-to-end educational system covering undergraduate teaching, graduate program development, research practice, and academic competitions. This article takes this faculty team as its research subject, systematically examining its organizational structure, operational mechanisms, and practical achievements. It focuses on analyzing the team's empowering role in developing advanced graduate courses and fostering students' innovation capabilities, distilling replicable construction experiences, and providing valuable references for the development of big data education teams at other institutions with industry-specific characteristics.

## II. The Construction Logic and Organizational Structure of the Specialized Big Data Education Team for Circulation

### 2.1. Construction Logic

The construction of the education team is closely centered around two core principles: First, responding to the requirements for building interdisciplinary programs in the new engineering field, addressing the challenge that single-discipline faculty members alone cannot adequately support the cultivation of versatile talents. By coordinating undergraduate and graduate levels of education, we are establishing a seamless undergraduate-graduate education system. Second, aligning with the talent demands for digital transformation in the circulation industry as outlined in the "14th Five-Year Plan for Building a Modern Circulation System," we are developing a specialized education system that distinctly reflects industry characteristics [7]. Guided by the objectives of "ensuring continuity through tiered team development, enhancing quality through the integration of science and education, forging a strong brand through industry-specific features, and elevating standards through undergraduate-graduate collaboration," the team deeply links faculty development with student outcomes, achieving synchronized resonance between team growth and professional development.

### 2.2. Tiered Structure: A Three-Level Layout for Senior, Middle-aged, and Young Staff

The team currently has 18 full-time faculty members, all of whom hold doctoral degrees. Among them, 11 hold senior professional titles, accounting for over 60%. The team is organized into a three-tier echelon based on age and functional roles, forming a hierarchical succession system characterized by "leadership - backbone - innovation," while also covering teaching responsibilities across all undergraduate and graduate levels:

1. Senior Leadership Team: Centered around Beijing's Distinguished Teachers and Great Wall Scholars, this team comprises members aged between 50 and 60. They are primarily responsible for the top-level design of the discipline, guiding the direction of teaching reform, coordinating major projects, and serving as mentors to young faculty members. They also teach core graduate courses and provide guidance on graduate theses, ensuring that the team adheres to its long-term strategic development goals.
2. Mid-career core faculty: Comprising 6 professors and associate professors, aged primarily between 40 and 50. This group includes program directors, department heads, and key members of the teaching administration team, who are responsible for developing core undergraduate courses and advanced graduate-level courses. Core tasks such as implementing educational reform projects, facilitating connections between universities and enterprises, and establishing a competition system serve as the backbone for team operations and the seamless integration of undergraduate and graduate studies.
3. Young Innovation Team: Composed of 11 young doctoral researchers aged 30-40, all with research backgrounds in fields such as computer science, management science and engineering, statistics, and artificial intelligence, this team is responsible for teaching cutting-edge technology courses at the undergraduate level, developing practical training courses for graduate students, providing daily guidance for student innovation projects and academic competitions, and assisting supervisors in conducting graduate research training. They serve as the source of technological innovation and vitality within the team.

The three-tier team features clear roles and responsibilities as well as complementary strengths: senior teachers pass on their experience, mid-career teachers take on important responsibilities, and young teachers spearhead cutting-edge initiatives. This approach effectively mitigates the risk of gaps in the teaching team, ensuring both the continuity and innovation of integrated undergraduate and graduate education [3].

### 2.3. Academic Network Structure: Multidisciplinary Integration and Fusion

The team has broken away from the traditional single-discipline faculty structure, with teachers' professional backgrounds spanning four major fields: mathematics and applied mathematics, probability theory and mathematical statistics, computer science and technology, and management science and engineering. This creates a complementary knowledge framework that integrates "mathematical and theoretical foundations-technical capabilities-industry-specific scenarios." Teachers with a strong mathematical and theoretical background solidify the algorithmic and theoretical foundations of undergraduate and graduate students, while teachers specializing in computer science focus on cultivating big data technologies and engineering skills. Meanwhile, teachers specializing in management science and operations research connect with industry scenarios in logistics, supply chains, and commodity trading, precisely matching the knowledge and capability requirements for specialized big data talent tailored to the unique characteristics of these industries. This approach addresses the common shortcoming in most universities' big data programs-focusing heavily on technology while neglecting industry-specific applications.

### 2.4. Functional Positioning

The team has established four core functional roles: First, as the main driver of undergraduate teaching reform, it coordinates the revision of major-specific talent development programs, the construction of curriculum systems, and the innovation of teaching methods. Second, as a supporting platform for graduate education, it undertakes the development of core graduate courses, provides research training and fosters students' innovative capabilities, and promotes seamless integration between undergraduate and graduate curricula. Third, as a faculty development platform, it leverages a mentorship system to simultaneously enhance the teaching and research abilities of young faculty members. Fourth, as a hub for practical education, it integrates university-enterprise resources and establishes a comprehensive educational pathway that connects classroom instruction, research practice, disciplinary competitions, and career and further education opportunities.

## III. A Team Operating Mechanism Integrating Science, Education, and Talent Development with Tiered Collaborative Efforts

### 3.1. A tiered development mechanism for mentoring and succession among senior, mid-career, and junior staff

The team has established a tiered development system that combines a "one-on-one mentoring system" with a regular, systematic teaching and research mechanism, thereby effectively implementing the requirements for the succession and development of the teaching staff. Each young teacher is assigned a senior or key teacher as their dedicated mentor, who

provides comprehensive support across three dimensions: teaching, research, and student development.

Teaching Competency Development: Senior faculty members regularly conduct model open classes, covering typical undergraduate and graduate courses. Young teachers participate in classroom observations and peer evaluations; they engage in collaborative lesson planning to refine teaching materials for undergraduate core courses and advanced graduate courses, and receive guidance from their mentors as they prepare for teaching skills competitions and innovation contests at various levels. Under the guidance of their mentors, several young teachers have won awards in the Beijing University Micro-course Competition and the Teaching Innovation Contest, and are gradually taking on teaching responsibilities for graduate-level courses.

Support for Research Capabilities: Senior professors leverage national natural science funds and provincial- and ministerial-level vertical research projects to involve young faculty members in research activities. They provide guidance to young faculty members as they apply for the Young Scientists Fund and science and technology projects sponsored by the Education Commission. At the same time, young faculty members are actively engaged in supervising graduate students, thereby integrating research into teaching and using mentoring to foster their professional growth. Several young doctoral graduates, after joining the faculty, have successfully led national and provincial-ministerial-level research projects and have become key contributors to graduate student training.

Passing on Educational Experience: Senior teachers share their guidance experience in undergraduate graduation theses, graduate dissertations, university innovation and entrepreneurship projects, and subject-specific competitions. Younger teachers leverage their technological strengths to develop cutting-edge practical training content. Both veteran and new teachers team up to guide undergraduate and graduate students in competitions, achieving an organic integration of experience transmission and technological innovation.

Meanwhile, the team has established a biweekly teaching and research salon system. In odd weeks, the focus is on teaching reform and curriculum development, with simultaneous discussions on the seamless integration of undergraduate and graduate courses. In even weeks, the team shares updates on research progress and industry applications, inviting outstanding graduate students to participate in these discussions, thereby creating a regular platform for two-way communication between teaching and research and fostering coordinated talent development across undergraduate and graduate programs.

### 3.2. The Two-Way Transformation Mechanism of Integrating Science and Education

The integration of science and education is the core pathway for enhancing the depth of teaching and enabling research to support and enrich teaching [8]. The team has established a comprehensive transformation chain-"research projects-advanced graduate courses-specialized undergraduate courses-student practice"-to promote deep integration between research and teaching and achieve integrated undergraduate-graduate education.

1. Transforming research findings into curriculum resources in a hierarchical manner: The team's faculty members are engaged in both vertical and horizontal research projects-including logistics optimization, commodity price forecasting, intelligent warehouse scheduling, and industry applications of large-scale models-whose results are prioritized for integration into advanced graduate courses such as "Advanced Machine Learning," "Machine Learning and Large-Scale Models," and "Advanced Operations Research." All these courses are developed based on the team's latest research findings, ensuring that graduate education remains at the cutting edge. Building on this foundation, mature case studies that have been validated through graduate-level instruction are simplified and adapted into specialized undergraduate courses and hands-on training projects, thereby establishing a graded transformation pathway from "research frontiers-advanced graduate courses-specialized undergraduate courses."
2. The research platform is opened to undergraduate and graduate students in a tiered manner: The team recruits outstanding undergraduates into faculty research groups to participate in basic research activities, while assigning core research projects to graduate students to take the lead in tackling challenging problems, thus establishing a hierarchical research training model characterized by "graduate students mentoring undergraduates, with faculty guiding the graduate students." Undergraduate programs such as the College Student Innovation and Entrepreneurship Training Program and the Practical Training Program are established based on ongoing faculty research projects. Graduate research projects, meanwhile, are aligned with real-world business needs; students have access to authentic datasets from the retail industry to conduct their research,

thereby achieving "genuine research topics, genuine data, and real-world applications." Hierarchical scientific research and education for "practice."

3. Synchronized coverage of teaching and research outcomes across undergraduate and graduate programs: The team simultaneously advances both scientific research and pedagogical reform. While applying for natural science projects, it also jointly applies for the Ministry of Education's Industry-University Cooperative Collaborative Talent Cultivation Program, municipal-level undergraduate teaching reform projects, and graduate education innovation projects. In doing so, the team transforms its experiences and methodologies from research practice into tangible outcomes for both undergraduate and graduate teaching reforms, achieving mutual empowerment between research and teaching and ensuring synchronized enhancement of undergraduate and graduate education.

### 3.3. A Collaborative Curriculum Co-creation Mechanism Across Disciplines

Leveraging the multidisciplinary strengths of its faculty, the team has established three major course groups organized around curriculum modules and implemented a cross-disciplinary collaborative teaching and research system. This approach addresses the fragmentation and knowledge silos inherent in interdisciplinary courses, while also coordinating the development of both undergraduate and graduate curricula.

1. Mathematical and Physical Foundations Course Group: Coordinates undergraduate foundational and major-specific courses such as Advanced Mathematics, Linear Algebra, Probability Theory, and Mathematical Statistics. Simultaneously develops advanced mathematical courses for graduate students, including "Advanced Mathematical Statistics" and "Stochastic Operations Research," thereby solidifying the tiered mathematical and physical foundations of both undergraduate and graduate students.
2. Big Data Core Technology Course Group: Jointly develop core undergraduate courses in data acquisition and cleaning, machine learning, big data storage and computing, and deep learning. Simultaneously, we are building advanced graduate-level courses such as "Advanced Machine Learning" and "Machine Learning and Large Models," thereby establishing a comprehensive technical curriculum pathway that spans from introductory undergraduate studies to advanced graduate-level training.
3. Specialized Course Group for Distribution: Develop distinctive undergraduate courses such as Logistics Data Analytics and Big Data Analytics for Commodities. Simultaneously, build cutting-edge graduate-level courses including "Theory of Logistics System Optimization" and "Big Data Analytics for Supply Chains." Integrate the university's accumulated case studies and data resources from the distribution industry to establish a distinct professional industry identity.

Each course group will jointly develop syllabi for undergraduate and graduate programs, practical training manuals, and supporting teaching resources. They will also collaborate on the integration of ideological and political education into courses, thereby establishing a pyramidal curriculum system that features three progressive levels-"foundation-core-specialty"-and ensures seamless衔接 between undergraduate and graduate programs. This approach will help avoid redundant development of course content and enable the efficient utilization of faculty resources.

### 3.4. A Collaborative Education Mechanism Integrating Production and Competition

The team fully integrates industry resources and a tiered faculty, building a practice-oriented education system driven by the dual pillars of "enterprise internships + discipline competitions," while also covering both undergraduate and graduate students.

1. In terms of industry-education integration: Mid-career core faculty members take the lead in connecting with industry enterprises and government departments to co-establish off-campus practice training bases. They also invite corporate experts to participate in the revision of undergraduate and graduate program curricula, as well as in the review of graduation projects and dissertation defenses. Additionally, they organize entrepreneur classrooms and cutting-edge industry lectures, and simultaneously open up internship and research project opportunities for both undergraduate and graduate students, thereby addressing the teachers' lack of practical industry experience.
2. In terms of education through competition: Implement a system where "senior teachers provide overall planning, mid-career teachers organize and coordinate, and young teachers take charge of daily guidance." The team adopts a tiered mentoring model, establishing a three-level selection and development system encompassing school-level competitions, city-level

competitions, and national-level competitions, with year-round, regular competition training sessions. Teachers in the talent pipeline collaborate closely, covering both undergraduate-level courses in mathematical modeling, big data skills, and statistical modeling, as well as graduate-level courses in mathematical modeling and big data analytics. This approach fosters a collaborative, practice-oriented educational framework that leverages competitions to enhance both learning and research across undergraduate and graduate programs.

## IV. Practical Achievements in Building the Education and Cultivation Team

After years of development, the team has achieved remarkable results in areas such as faculty development, curriculum construction, student capability cultivation, and improvement of employment quality. These achievements span both undergraduate and graduate levels, thereby validating the effectiveness of the "tiered collaboration + integration of science and education" development model.

### 4.1. Achievements in Faculty Development

The echelon-based mentorship and support system has effectively accelerated the growth of young teachers, steadily enhancing the team's overall teaching and research capabilities. After joining the faculty, young teachers quickly adapted to their teaching roles; many have successfully been promoted to associate professors, are now leading national-level and provincial/ministerial-level research projects, have published high-quality academic papers, and are gradually taking on responsibilities for graduate course instruction and thesis supervision.

In terms of teaching competence, the team currently boasts two Beijing Municipal Teaching Masters and one Beijing Youth Teaching Master, with numerous faculty members recognized as outstanding lecturers at the university level. The team has collectively won dozens of national- and city-level teaching competition awards, including prestigious events such as the National College Mathematics Micro-course Competition and the Beijing University Teaching Innovation Contest. Regarding research and teaching achievements, the team has jointly undertaken more than 20 projects, including the Ministry of Education's Industry-Academia Cooperation Collaborative Talent Cultivation Program, Beijing Municipal Undergraduate Teaching Reform Projects, and university-level key teaching reform initiatives. The team has developed several municipal-level high-quality courses and model courses integrating ideological and political education into curricula, and has served as chief editor of multiple planned textbooks. Meanwhile, the team has also produced numerous research and teaching outcomes related to graduate education, providing strong support for the development and expansion of degree programs such as Applied Statistics.

### 4.2. Achievements in Specialty and Curriculum Development

The team has systematically developed an integrated undergraduate-to-graduate curriculum system tailored for the specialty of big data in circulation. This curriculum comprehensively covers three categories of courses-mathematical and statistical foundations, core technologies, and industry-specific features-spanning the four years of undergraduate study as well as the graduate program, thereby establishing a distinctive educational profile that sets it apart from comprehensive universities. At the undergraduate level, the team has built a variety of blended online-and-offline courses and a rich repository of practical training resources, and has established an integrated training platform for machine learning and big data programming. At the graduate level, the team has developed a series of advanced core courses, including "Advanced Machine Learning," "Machine Learning and Large Models," and "Advanced Operations Research," whose content is closely aligned with the team's research achievements and cutting-edge industry trends. The overall quality of the program has steadily improved: the undergraduate program has successfully passed its professional accreditation, graduate program quality continues to rise, and the talent-development plans are continuously iterated and optimized, leading to ever-increasing program recognition and industry acclaim.

### 4.3. Outcomes of Undergraduate Scientific and Technological Innovation and Practical Competencies

Under the tiered guidance of experienced faculty mentors, undergraduate students have significantly enhanced their innovative and practical abilities. Over the past three years, students have participated in the U.S. ... In competitions such as the National College Mathematical Modeling Competition, the National College Mathematical Modeling Competition, the National Big Data Skills Competition, the Statistical Modeling Competition, and the "Challenge Cup," students have collectively won over a hundred awards at the international, national, and provincial/ministerial levels. Each year, dozens of projects are approved under the College Students' Innovation and Entrepreneurship Training Program; many of these projects focus on topics related to

circulation sectors, such as logistics optimization and big commodity data analysis. Some of these project outcomes have resulted in software copyrights and academic papers. During their internships at enterprises, students have demonstrated solid technical skills and deep industry insights, earning widespread praise from employers.

### 4.4. Employment and Further Education Outcomes for Undergraduate Students

The program has already graduated three cohorts of undergraduate students, and the quality of talent cultivation is clearly reflected in employment and further education statistics. The overall employment rate of graduates has remained stable at over 97%, with the class of 2023 achieving a 100% employment rate. Approximately 17% of graduates pursue advanced studies, gaining admission to prestigious domestic universities such as Beijing University of Technology and Beijing University of Posts and Telecommunications, as well as renowned overseas institutions. The alignment between graduates' employment sectors and their majors is high-over half of the graduates have found jobs in fields related to logistics, finance, information technology, government statistics, and other similar areas. Employers generally recognize the graduates' "technical expertise plus industry-specific knowledge" composite competencies, which perfectly align with the university's distinctive talent-development orientation focused on circulation[7].

### 4.5. Graduate Education and High-Level Educational Outcomes

The empowering role of team building in graduate education is equally significant, yielding advanced educational outcomes that complement and enhance undergraduate training. First, the graduate curriculum system continues to improve: core courses such as "Advanced Machine Learning," "Machine Learning and Large Models," and "Advanced Operations Research" have seen sustained improvements in teaching quality. The course content stays closely aligned with cutting-edge research and industry trends, providing graduate students with systematic training in both academic and technical skills. Second, graduate students have achieved outstanding research and innovation results. Under the guidance of their teams, graduate students have collectively published numerous papers in SCI journals and core academic journals; many have received prestigious honors such as the National Scholarship and the title of Outstanding Graduate of Beijing Municipality. Moreover, a high proportion of graduate students participate in industry-sponsored horizontal research projects, developing strong engineering practice and problem-solving abilities. Third, graduate students have excelled in academic competitions, achieving far above-average success rates in contests such as the "Huawei Cup" Chinese Graduate Mathematical Modeling Competition and the National College Students Big Data Analysis Technology Skills Competition. Several students have even won second- and third-place awards at the national level multiple times. Fourth, the employment quality of graduate students is exceptional: most graduates have secured positions at leading companies in industries such as logistics, finance, and the internet, or have gone on to pursue doctoral degrees. The high-level value of graduate education is gradually becoming evident.

## V. Existing Issues and Optimization Paths

Based on the team-building retrospective, corporate surveys, and graduate feedback, there are still two key shortcomings in the current talent-development team building that require further optimization and improvement.

Firstly, the depth of collaborative teaching and research between universities and enterprises is insufficient. Enterprise mentors mostly participate in talent development through lectures and short-term internships, while projects involving long-term joint curriculum development and joint project applications are relatively few. The pace at which cutting-edge industrial technologies and case studies are updated still needs to be accelerated, particularly the number of university-enterprise joint training programs at the graduate level remains inadequate. To address this, we should deepen

The school-enterprise joint research and teaching mechanism features a fixed module of co-taught courses offered by enterprises each semester. Together with industry-leading companies, we jointly develop research projects on big data in the circulation sector. We invite corporate experts to deeply participate in the revision of undergraduate and graduate curriculum outlines and the design of practical training programs. We also co-establish joint graduate training bases, thereby achieving a dynamic alignment between industry needs and academic content.

Secondly, there is a need to strengthen the teaching preparedness related to generative AI. Currently, undergraduate curricula and advanced graduate-level training programs offer relatively few courses on cutting-edge technologies such as large language models and multimodal analysis, making it difficult to fully meet the industry's latest technological demands. To address this, we should leverage the synergistic advantages of our talent pipeline: young faculty members specializing in AI should take the

lead, while senior faculty provide support by drawing on their deep industry experience. Together, the team can collaboratively develop practical training modules for industry applications of large models, upgrade the content of graduate courses such as "Machine Learning and Large Models," build a case library covering various application areas in the generative AI ecosystem, and simultaneously apply for relevant teaching reform projects and horizontal research topics, thereby accelerating the integration of cutting-edge technologies into both undergraduate and graduate education systems.

In addition, we should further broaden channels for teachers to take up temporary positions in enterprises, regularly arranging young teachers to engage in short-term practical experiences in industry enterprises, thereby acquiring first-hand industrial experience and continuously increasing the proportion of dual-qualified faculty members [5]. At the same time, we should refine the incentive mechanisms for graduate students to participate in undergraduate internship guidance, further strengthening the educational synergy between undergraduate and graduate programs.

## VI. Conclusion

In response to the talent demands arising from the digital transformation of the circulation industry, the big data education team at Beijing University of Commerce has adopted a core approach centered on "integrating science and education with collaborative team development." This approach has enabled the team to establish a faculty pipeline that seamlessly connects senior, mid-career, and junior scholars across multiple disciplines. The team has also developed a comprehensive operational mechanism encompassing mentorship and hands-on training, two-way integration of teaching and research, co-creation of interdisciplinary courses, and the integration of industry practice and competitive activities into education. As a result, the team has forged a distinctive interdisciplinary education model tailored to the unique characteristics of the circulation industry. This team-building effort not only supports the cultivation of innovative, application-oriented undergraduate talents but also empowers the development of advanced graduate-level courses and fosters students' innovation capabilities, thereby establishing an integrated undergraduate-and-graduate education framework.

Practice has proven that a reasonable hierarchical structure is the cornerstone of a team's sustainable development; the integration of science and education is the key lever for enhancing teaching quality; industry-specific characteristics are the linchpin for differentiated development of local institutions; and collaborative efforts between undergraduate and graduate programs represent an important direction for expanding the educational value of the team. This development approach simultaneously achieves the dual goals of faculty growth and student development, and can serve as a replicable practical reference for the construction of big data teaching teams at similar industry-specific institutions. In the future, the team will continue to deepen collaboration between universities and enterprises, closely follow cutting-edge advancements in artificial intelligence technology to update teaching content, and continuously refine the integrated, interdisciplinary collaborative education mechanism spanning undergraduate and graduate levels, thereby nurturing more high-quality, multidisciplinary big data professionals for the digital circulation sector.

**Funding Support:**

Beijing Higher Education Society's 2025 General Project "Research on an Interdisciplinary Talent Cultivation Model for Data Science and Big Data Technology Majors Empowered by Artificial Intelligence" (MS2025091); Beijing University of Commerce, 2026 Key project for postgraduate education and teaching reform: "Empowering the 'Artificial Intelligence Plus' Approach to Reform and Explore New Models for Teaching the 'Advanced Machine Learning' Course for Postgraduates"; Data Science and Big Data Technology Education Team at Beijing University of Commerce and Logistics.

**References**

[1] Ministry of Education. Artificial Intelligence Innovation Action Plan for Higher Education Institutions [EB/OL]. 2018-04-02.

[2] Department of Higher Education, Ministry of Education. "Beijing Guidelines" for the Construction of New Engineering [EB/OL]. 2017-06-12.

[3] Yang Hong, Li Zhiyao, Zhang Zhiqiang. Exploration and Practice of a Practical Competency Training System for the Majors of Data Science and Big Data Technology [J]. Journal of Chengdu University (Social Sciences Edition), 2018(3):106-112.

[4] Ministry of Education, Central Organization Department, Central Publicity Department, and other six departments. Guiding Opinions on Strengthening the Reform of Young Teacher Development in Higher Education Institutions in the New Era [EB/OL]. 2020-12-24.

[5] Ministry of Education, Central Organization Department, Central Publicity Department, and

other six departments. Guiding Opinions on Strengthening the Construction of University Faculty in the New Era [EB/OL]. 2025-10-24.

[6] Lin Jian. Constructing China's New Engineering Education for the Future [J]. Tsinghua University Journal of Education, 2017, 38(02):26-35.

[7] National Development and Reform Commission. "14th Five-Year Plan" for Building a Modern Circulation System [EB/OL]. 2022-01-13.

[8] Zhang Wei, Gong Shouliu. The Core Essence and Practical Paths of Integrating Science and Education[J]. Chinese Higher Education, 2023(12): 34-36.