

Research on the Construction Path of the Practical Teaching Resource Database for Accounting Major Driven by Artificial Intelligence

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Abstract: The digital economy and artificial intelligence technologies drive the digital-intelligent transformation of the accounting industry, putting forward new requirements for the cultivation of digital-intelligent talents for accounting majors. As the core carrier of practical teaching, the intelligent construction of the practical teaching resource database has become the key to talent cultivation. From the perspective of artificial intelligence drive, this paper explores the construction path of the practical teaching resource database for accounting majors. By sorting out the current situation of resource database construction, it analyzes the core problems in four aspects: resource supply, technology application, construction mode and implementation, and clarifies the development opportunities such as technology and policies as well as multiple practical challenges. The study establishes five construction principles including practicality and intelligence, builds the core framework of “One Core, Four Modules, Three Supports” and a four-dimensional operation mode, designs a phased implementation path of “Pre-preparation - Mid-construction - Later Promotion and Operation & Maintenance”, and builds an all-round guarantee mechanism from six dimensions including policies, technology and teaching staff. The models and paths constructed in this study provide practical references for universities to build digital-intelligent practical teaching resource databases, help cultivate digital-intelligent interdisciplinary accounting talents, and promote the digital transformation of the accounting industry.

Keywords: Artificial Intelligence; Accounting; Practical Teaching Resource Database; Digital-intelligent Talent Cultivation; Industry-education Collaboration

Published: Apr 10, 2026

DOI: <https://doi.org/10.62177/jetp.v3i1.1226>

1. Introduction

The continuous evolution of the digital economy has pushed the accounting industry into a stage of in-depth digital and digital-intelligent transformation. The large-scale application of digital-intelligent technologies and tools such as financial robots, intelligent auditing, and big data financial analysis^[1] has reconstructed the core competency framework and practical work paradigm of accounting positions, and also put forward new requirements for the talent cultivation of accounting majors in institutions of higher education. Practical teaching is the core link to cultivate students' practical operation ability and strengthen their post-adaptation literacy for accounting majors, and its teaching quality directly determines the overall effectiveness of professional talent cultivation. As a key carrier supporting the orderly development of practical teaching, the

construction level and digital-intelligent adaptability of the practical teaching resource database have become the core starting point to meet the needs of the digital-intelligent transformation of the accounting industry.

At present, the construction of accounting practical teaching resource databases in China has basically completed the iterative transformation from offline paper-based resources to online digital resources, and gradually formed a diversified construction pattern of independent construction by universities, collaborative co-construction between universities and enterprises, and overall co-construction at provincial and national levels. Phased achievements have been made in the scenario-based construction of practical training and the promotion of shared teaching resources. However, on the whole, compared with the iterative trend of AI technology and the practical needs of the digital-intelligent development of the accounting industry, there is still a prominent adaptability gap in the current resource database construction. Various construction shortcomings have become an important bottleneck restricting the improvement of the quality of digital-intelligent accounting talent cultivation. Under the existing conditions, how to rely on the enabling effect of AI technology to solve practical problems such as lagging update of resource database content, shallow integration of digital-intelligent technologies, and imperfect industry-education collaboration mechanisms, build a digital-intelligent, systematic and dynamic practical teaching resource database that conforms to the law of industrial development and the teaching needs of universities, and promote the precise docking of practical teaching resources with the needs of digital-intelligent accounting positions^[2], has become the core subject of teaching reform for accounting majors in universities.

The in-depth advancement of the construction of new liberal arts has provided a clear policy orientation and solid financial support for the digital-intelligent transformation and reform of accounting majors. The iterative upgrading and gradual decline in application costs of generative AI, large model technology, big data analysis algorithms and other technologies have also laid a solid technical foundation for the digital-intelligent upgrading and transformation of practical teaching resource databases. Based on this background, taking AI-driven as the core research perspective, focusing on the core issue of constructing accounting practical teaching resource databases, this paper systematically sorts out the current situation of resource database construction and deeply analyzes existing problems, explores adaptive construction principles, core framework systems, long-term operation modes and landing implementation paths, and establishes an all-round guarantee mechanism. It aims to provide theoretical support and practical plans for universities to build high-quality digital-intelligent practical teaching resource databases for accounting, help improve the quality and efficiency of accounting practical teaching reform, cultivate more digital-intelligent interdisciplinary accounting talents meeting the needs of industrial development, and provide talent guarantee for the digital transformation and high-quality development of the accounting industry.

2. Current Situation Analysis of AI-driven Accounting Practical Teaching Resource Database

2.1 Current Situation of Accounting Practical Teaching Resource Database Construction

With the deepening of the digital transformation of the accounting industry and the continuous advancement of teaching reform of accounting majors in institutions of higher education^[3], the construction of accounting practical teaching resource databases in China has gradually formed a construction pattern with independent construction by universities, university-enterprise cooperation, and provincial/national co-construction as the main bodies, and phased construction achievements have been made in the implementation of digital transformation of resources and the construction of basic practical training scenarios.

From the perspective of construction subjects and resource characteristics, university-built resource databases are constructed relying on internal teaching staff and teaching platform systems, with the core service goal of on-campus professional teaching. The resource content system mainly focuses on basic practical training modules such as basic accounting, manual bookkeeping, and traditional financial software application, and resource types are mainly electronic teaching courseware, standardized exercise banks, teaching demonstration videos, etc. University-enterprise cooperative resource databases are jointly built by universities and financial software enterprises as well as large and medium-sized enterprises. By introducing real enterprise practical data and standardized business operation processes, some resource databases have added simplified practical training modules such as financial robot application and big data auditing practice, initially realizing the docking

between teaching resources and industrial practical scenarios. As a high-quality practical resource integration platform, provincial/national resource databases gather high-quality practical resources from multiple universities and enterprises, mainly undertaking the function of cross-university sharing and radiation of basic accounting practical resources, providing an important reference paradigm for the construction of resource databases in local universities in the region.

From the perspective of construction effectiveness and development trend, accounting practical teaching resources have basically completed the transformation from offline paper-based resources to online digital resources at present. Most universities have realized the online storage and convenient access of courseware, question banks, practical training videos and other resources, breaking the time and space constraints of offline practical teaching to a certain extent. Some key universities of finance and economics and application-oriented undergraduate universities have taken the lead in introducing virtual simulation technology to build virtual simulation practical training modules such as tax declaration and financial accounting, helping students complete basic practical operations in simulated scenarios^[4]. Industry-education collaborative construction has become an industrial consensus, and the cooperative relationship between universities and enterprises has gradually shifted from simple resource donation to joint development and collaborative construction. Some enterprises deeply participate in the design of practical training courses and the development of practical cases, injecting real practical elements into the resource database and promoting the initial connection between teaching resources and enterprise post needs. According to relevant survey data, more than 80% of universities have built online digital practical teaching resource databases, and more than 60% of universities have carried out resource database co-construction cooperation with enterprises to varying degrees, which directly reflects that the current resource database construction presents a development trend of deepening digital transformation and popularization of collaborative co-construction mode.

However, from the perspective of overall construction, the existing construction achievements are still in the basic development stage, and mature systems adapting to the digital-intelligent development of the accounting industry have not been formed in terms of resource supply system, depth of technology application, construction mode design, implementation mechanism and other dimensions. There is still a significant adaptability gap between the core requirements of AI-enabled accounting education and the core needs of the digital transformation of the accounting industry^[5]. Such shallow problems at the basic construction level have become an important inducement for the prominent problems in the four core dimensions of resources, technology, mode and implementation in the subsequent resource database construction, which are overall difficult to meet the actual needs of digital-intelligent accounting talent cultivation.

2.2 Core Problems in the Current Construction of Accounting Practical Teaching Resource Database

Although the construction of accounting practical teaching resource databases in China has made phased progress, comprehensively speaking, there is still a significant adaptability gap with the iterative development trend of AI technology and the practical needs of the digital transformation of the accounting industry. Prominent problems are exposed in four core levels: resource supply, technology application, construction mode and implementation, which are difficult to meet the actual needs of digital-intelligent accounting talent cultivation^[6].

At the level of resource supply, the core problems focus on three aspects: lagging update of resource content, homogenization of resource system, and lack of update mechanism. Firstly, the update rhythm of resource content lags behind the digital development process of the accounting industry. The existing resource databases still take traditional accounting practice content as the core, lacking digital-intelligent practical training resources fitting the industrial frontier, such as AI auditing practice, intelligent tax declaration, financial big data analysis, AI evaluation of R&D performance and other modules. Secondly, the content homogenization of resource databases in different universities is prominent. Most resource databases have not built a personalized and differentiated resource system based on their own school-running positioning, industrial characteristics and regional economic development needs^[7]. Thirdly, the resource update lacks a normalized and institutionalized mechanism, which is difficult to adapt to the rapid iteration characteristics of accounting digital-intelligent technologies and practical scenarios. According to the survey results of this study, 72% of the surveyed universities have not substantially updated their core practical training resources in the past three years, and 90% of the surveyed universities have not set up special resource update posts and normalized guarantee mechanisms.

At the level of technology application, AI technology empowerment has three problems: superficiality, insufficient adaptability and lack of technical maintenance. Firstly, most universities only stack digital-intelligent technologies such as RPA and virtual simulation as independent tools in the resource database, without deep integration with teaching processes and practical training links, failing to give full play to the enabling value of technology for practical teaching. Secondly, some introduced AI technologies have insufficient adaptability with accounting practical teaching scenarios, and have not been personalized optimized and transformed in combination with specific teaching objectives and students' learning characteristics. Thirdly, universities generally lack professional technical maintenance teams with both accounting professional knowledge and AI technology capabilities, resulting in the difficulty of continuous optimization and upgrading of intelligent practical training modules in the resource database. The survey shows that among the 62 surveyed universities, 78% of the university resource database AI modules only have tool display functions without effective integration with actual practical training links, and 83% of the surveyed universities lack professional AI technology maintenance teams.

At the level of construction mode, the core problems are reflected in the lack of top-level design, fragmentation of resource integration, insufficient industry-education collaboration, and failure to form a closed-loop mechanism. Firstly, the resource database construction lacks systematic top-level design and standardized construction mode, and the integration of scattered digital teaching resources, practical training scenario resources and enterprise practical resources is insufficient, resulting in the fragmentation and isolation of the resource system. Secondly, the depth and breadth of industry-education collaborative construction need to be improved. Enterprises are mostly in a passive participation state, with low voice and actual participation in resource database construction, failing to build a benign construction mechanism of "university-led, enterprise-enabled, collaborative development". Thirdly, the resource database construction has not formed a full-process closed-loop system of "resource supply - teaching application - effect evaluation - resource optimization", and the evaluation results cannot effectively guide the iterative improvement and optimization of the resource database.

At the level of implementation, the core problems include unclear implementation path, insufficient teaching staff capacity, and lack of personalized supply. Firstly, the resource database construction lacks specific and implementable implementation paths. Some universities only formulate macro construction plans without clarifying the operation standards and responsible subjects of each link such as resource development, platform construction, teaching application and operation & maintenance, leading to the formalization of construction work. Secondly, the digital-intelligent teaching ability of the teaching staff has obvious shortcomings. Most accounting teachers lack AI technology application ability and digital-intelligent practical training course design ability, making it difficult to effectively carry out intelligent accounting practical teaching. Thirdly, the resource database construction has not fully considered students' personalized learning needs, still adopting a "unified, standardized" resource supply mode, which cannot realize the personalized and precise push of practical training resources according to students' ability level, learning rhythm and career development plan, failing to meet the digital-intelligent ability cultivation needs of different students.

2.3 Opportunities and Challenges of AI-driven Accounting Practical Teaching Resource Database Construction

The rapid iteration of AI technology and the in-depth promotion of the digital transformation of the accounting industry have brought multiple development opportunities for the construction of AI-driven accounting practical teaching resource databases, while also making them face multi-dimensional practical challenges such as technology, teaching staff and funds. The coexistence of opportunities and challenges has become the core feature of current resource database construction.

In terms of development opportunities, firstly, the in-depth advancement of the construction of new liberal arts has provided a clear policy orientation and solid financial support for the digital-intelligent upgrading of accounting practical teaching resource databases. Educational departments at all levels have successively issued special policies to encourage universities to carry out digital-intelligent teaching reform in economics and management disciplines, creating a good policy environment for resource database construction. Secondly, the digital transformation of the accounting industry has spawned a large number of digital-intelligent accounting post needs, and enterprises have put forward higher standards for the digital-intelligent practical ability of accounting talents, clarifying the core training objectives and content design directions for AI-

driven resource database construction. Thirdly, the rapid development and gradual decline in application costs of cutting-edge technologies such as generative AI, large models and big data analysis have provided solid technical support for the digital-intelligent construction of resource databases. Relying on the automatic generation capability of generative AI can greatly reduce the labor cost of traditional practical training case development, and large model technology can further promote the construction of accounting information system agents and enrich the intelligent practical training scenarios of the resource database. Fourthly, the urgent demand for accounting major teaching reform in universities constitutes the endogenous driving force for resource database construction. The contradiction between the traditional practical teaching mode and the needs of digital-intelligent talent cultivation has become increasingly prominent, and universities urgently need to solve teaching pain points and improve the quality of accounting talent cultivation by building a digital-intelligent practical teaching resource database.

In terms of practical challenges, the core problems are deeply related to and intertwined with the four core problems of resources, technology, mode and implementation mentioned above, forming multiple restrictive factors and becoming an important obstacle to the digital-intelligent construction of resource databases^[8]. Firstly, at the resource level, the construction, development and operation & maintenance of AI-driven resource databases require continuous high investment of funds and technical costs. Local application-oriented universities and higher vocational colleges generally face the problem of insufficient capital investment, which is difficult to support the continuous development and dynamic update of digital-intelligent practical training resources, directly affecting the content quality and cutting-edge nature of the resource database. Secondly, at the technical level, the deep integration of AI technology and accounting practical teaching scenarios is quite difficult, and it is easy to fall into the construction misunderstanding of simple technology stacking, making it difficult to achieve organic combination with teaching objectives, teaching processes and practical training links. Meanwhile, the resource database construction lacks a perfect data security protection system, and there is a risk of leakage of enterprise practical data and student practical training data. At present, unified ethical norms for the application of AI technology in accounting teaching have not been formed, and the risk prevention and control ability of technology application is insufficient. Thirdly, at the mode level, a systematic construction mode adapting to AI technology application has not been formed, the integration of technical resources, practical resources and teaching resources is insufficient, the depth and breadth of industry-education collaboration need to be improved, and the participation of enterprises in technology research and development and resource development is low, failing to build a benign mechanism of collaborative co-construction by universities, enterprises, industry associations and technology service providers. Fourthly, at the implementation level, there is a serious shortage of interdisciplinary teaching staff with accounting professional knowledge, teaching ability and AI technology application ability. Most accounting teachers have not received systematic training on AI technology teaching application, making it difficult to effectively carry out intelligent accounting practical training course design and teaching guidance, which has become the core bottleneck for the landing application of the resource database. Meanwhile, the resource database construction lacks specific and implementable implementation standards and responsibility division mechanisms, which is difficult to ensure the orderly progress of various construction work and directly affects the construction effectiveness and teaching application effect of the resource database.

3. Construction Mode of AI-driven Accounting Practical Teaching Resource Database

3.1 Construction Principles

The construction of an AI-driven accounting practical teaching resource database should be based on the core goal of cultivating digital-intelligent practical abilities of accounting talents, taking into account the laws of accounting education, industrial development needs and technology application characteristics, and ensuring the construction direction and scientific rationality by establishing five core principles. The principle of practicality is the fundamental orientation of resource database construction. The content and function design should be closely connected with the competency requirements of enterprise digital-intelligent accounting positions, focusing on the core processes and key scenarios of accounting practice, and avoiding the disconnection between resource development and post practice. The principle of intelligence reflects the core characteristics of the resource database. It is necessary to deeply embed technologies such as generative AI, RPA and

virtual simulation into the whole process of resource development, teaching application and effect evaluation, build a human-machine collaborative practical training and intelligent auxiliary teaching mode, and fully release the enabling value of AI technology for practical teaching^[9]. The principle of systematicness constitutes the architectural foundation of the resource database. Through the systematic integration and layout of various accounting practical teaching resources, a closed-loop operation mechanism of “resource supply - teaching application - effect evaluation - resource optimization” is constructed to reduce resource fragmentation and link disconnection^[10]. The principle of dynamism provides a guarantee for the long-term operation of the resource database. A resource update mechanism linked with industrial technology iteration, practice update and teaching reform is established to maintain content cutting-edge nature and teaching adaptability under reasonable conditions. The principle of openness is an important foundation for multi-party co-construction. It breaks the single-subject construction pattern of universities, promotes the collaborative participation of universities, enterprises, industry associations and technology service providers, and realizes the cross-subject and cross-regional integration and sharing of high-quality practical resources.

3.2 Core Construction Framework

Figure 1: The Construction Framework of Accounting Practical Teaching Resource Library Driven by Artificial Intelligence

Overall Goal	Precise Alignment of Technology Empowerment, Resource Adaptation, and Competency Cultivation
One Core	Cultivate Digital-Intelligent Practical Competencies for Accounting Majors
Three Pillars of Support	Technical Support; Subject Support; Evaluation Support
Four Modules	Basic Accounting Training Module; Intelligent Scenario Training Module; Case and Question Bank Module; Faculty and Training Module

This paper constructs an AI-driven accounting practical teaching resource database framework of “One Core, Four Modules, Three Supports”, which are connected and integrated with each other to form a hierarchical and complete system structure, realizing the precise docking of technology empowerment, resource adaptation and ability cultivation. The resource database takes cultivating the digital-intelligent practical ability of accounting majors as the core, which runs through the whole process of construction, operation and application. All resource development, scenario design and function configuration are centered on improving students’ basic accounting professional ability, AI tool application ability, digital-intelligent scenario practical operation ability, financial data analysis ability and practical problem-solving ability^[11], ensuring that the construction goals are highly consistent with the requirements of digital-intelligent accounting talent cultivation^[12]. The four modules constitute the core content carrier of the resource database, comprehensively covering the whole process of practical teaching and the core needs of teachers and students. Among them, the basic accounting practical training module integrates AI tools such as RPA accounting processing, OCR intelligent recognition and automatic accounting into traditional core course practical training to promote the digital-intelligent upgrading of basic practical training; the intelligent scenario practical training module builds a high-simulation virtual simulation practical training environment around the core post scenarios such as intelligent auditing, intelligent taxation, financial sharing and intelligent consolidated statements^[13], helping students immerse themselves in mastering the digital-intelligent accounting work process; the case and question bank module uses generative AI to generate multi-industry and multi-level practical cases and exercise resources, equipped with intelligent correction and automatic analysis functions to improve the efficiency of practical training evaluation and Q&A; the teaching staff and training module integrates AI teaching training courses, digital-intelligent practical training design plans and dual-teacher co-construction resources to provide professional support for teachers’ digital-intelligent teaching ability improvement. The three support systems provide guarantees for the stable operation and landing application of the resource database. Technical support focuses on building a platform architecture integrating AI application, resource storage and data interaction, and improving the data security and risk prevention and control system; subject support constructs a four-in-one collaboration mechanism of universities, enterprises, industry associations and technology service providers, clarifying the division of powers, responsibilities and collaboration paths; evaluation support establishes a multi-dimensional and dynamic

operation and teaching effect evaluation system, forming feedback around resource quality, teaching application, ability improvement and other dimensions to provide a scientific basis for the continuous optimization of the resource database.

3.3 Operation Mode

Figure 2: Operation Mode of Accounting Practical Teaching Resource Repository Driven by Artificial Intelligence

Top-level Goal	AI-driven Operation Model of Accounting Practical Teaching Resource Library
Four Core Concepts	University-enterprise Collaborative Co-construction;AI Technology Empowerment;Dynamic Update;Personalized Recommendation
Four Operational Mechanisms	Co-construction Mechanism;Empowerment Mechanism;Update Mechanism;Recommendation Mechanism
Underlying Support	Institutional Guarantee;Personnel Guarantee;Technical Guarantee;Funding Guarantee
Final Effect	Full-process Intelligent, Personalized, and Long-term Teaching Value

Relying on the above core framework, this paper designs an AI-driven accounting practical teaching resource database operation mode of “university-enterprise collaborative co-construction, AI technology empowerment, dynamic update, personalized push”, clarifying the whole-process operation logic, promoting the scientific and digital-intelligent development of resource database construction and application, and realizing long-term teaching value. In terms of university-enterprise collaborative co-construction, a multi-participant system with clear powers and responsibilities and efficient collaboration is constructed. As the teaching subject, universities are responsible for sorting out practical teaching needs, integrating teaching resources and providing application feedback; enterprises provide practical data, scenario resources, technology development and platform operation & maintenance support; industry associations undertake the functions of standard formulation, quality supervision and professional guidance; technology service providers are responsible for platform construction, upgrading and maintenance, and AI function optimization. The four parties collaborate to form a co-construction and sharing pattern. In terms of AI technology empowerment, give full play to the supporting role of intelligent technology in the whole teaching process, use generative AI to realize the intelligent generation and customization of cases and question banks, rely on big data analysis to capture learning behaviors and competency weaknesses, realize real-time guidance of practical training processes through virtual simulation and intelligent monitoring, and complete automatic correction and precise analysis through AI intelligent evaluation, comprehensively improving teaching efficiency and pertinence. In terms of dynamic update, establish a resource update mechanism linked with industrial development, teaching feedback and technology iteration, update practical training content closely following the digital-intelligent accounting practice and technological frontier, optimize function design according to teaching application feedback, upgrade platform capabilities combined with the iteration of new AI technologies, and clarify special personnel in charge, standardize update cycles and quality standards through normalized working mechanisms to ensure that the resource database continuously adapts to teaching and industrial needs. In terms of personalized push, build a precise push system based on learning portraits, form student characteristic models by collecting information such as learning duration, operation accuracy, error question types and career planning through big data, push adaptive resources and scenarios according to competency weaknesses, learning rhythms and development directions, and establish a push effect feedback closed loop to continuously optimize models and matching accuracy, realizing the digital-intelligent practical teaching supply of “one person, one face”.

4. Implementation Path of AI-driven Accounting Practical Teaching Resource Database

Figure3: 4.Implementation Path of AI-driven Accounting Practical Teaching Resource Database

Stage	Core Objective	Main Content
Preparatory Stage: Lay a Solid Foundation and Integrate Technologies	Clarify construction needs, integrate forces, and formulate standard plans	1. Demand Research and Analysis;2. Establish a Cross-subject Collaborative Construction Team 3. Formulate Construction Plans and Quality Standards

Stage	Core Objective	Main Content
Mid-term Construction Stage: Implement Modules and Integrate Technologies	Complete the development of four modules, integrate AI technologies, and build the platform	<ol style="list-style-type: none"> 1. Resource Integration and Development 2. Technical Platform Construction 3. Pilot Operation and Optimization
Post-promotion and Operation & Maintenance Stage: Long-term Operation and Continuous Optimization	Full-scale application, establish a long-term mechanism, and deepen industry-education integration	<ol style="list-style-type: none"> 1. Full Promotion and Application 2. Establish a Long-term Operation and Maintenance Mechanism 3. Deepen Industry-education Collaborative Co-construction and Resource Sharing

4.1 Pre-preparation Stage: Consolidate the Foundation and Clarify Needs

The pre-preparation stage aims to clarify the construction needs of the resource database, integrate multi-party forces, and formulate a systematic construction plan, laying a foundation for the construction of the AI-driven accounting practical teaching resource database. This stage is led by universities, with the collaborative participation of enterprises, industry associations and technology service providers. Demand research and analysis is the logical starting point of resource database construction. Through conducting teaching demand surveys among university teachers and students, combined with in-depth interviews with enterprise financial directors, industrial experts and technicians, the dual demands of the teaching end and the industrial end are systematically sorted out, the competency standards of digital-intelligent accounting positions, the boundaries of practical training scenarios and the function positioning of the resource database are clarified, and a scientific and complete demand analysis report is formed to provide content, technical and functional basis for subsequent construction. On this basis, integrate key university teachers, enterprise practical experts, technology developers and industry association members to form a cross-field and interdisciplinary collaborative construction team, and reasonably divide the responsibilities and working mechanisms of all parties. Universities are responsible for teaching resource design and teaching adaptation control; enterprises are responsible for practical data supply and scenario guidance; industry associations are responsible for standard formulation and quality supervision; technology service providers are responsible for technology selection and platform development, and ensure efficient collaboration in the construction process through normalized communication. Combined with the demand analysis results and the overall construction idea, further formulate the resource database construction plan and quality standard system, clarify the construction objectives, content framework, technical route, time nodes, responsibility division and fund use plan, and establish quality evaluation indicators covering resource content, technical platform, practical training scenarios and teaching applications to ensure the standardized and orderly follow-up construction work with clear basis.

4.2 Mid-construction Stage: Module Landing and Technology Integration

Mid-construction is the core implementation stage of resource database construction, focusing on completing the development of four modules, deep integration of AI technology and platform construction, which is promoted collaboratively by universities, enterprises and technology service providers, with professional guidance from industry associations. In terms of resource integration and development, screen, optimize and integrate the existing practical teaching resources of universities and enterprise practical resources, promote the standardization and digital-intelligent upgrading of basic accounting practical training content, and develop high-simulation virtual simulation practical training resources around digital-intelligent core scenarios such as intelligent auditing, intelligent taxation and financial sharing center operation; rely on generative AI technology to build a multi-industry and hierarchical case and question bank system, equipped with intelligent correction, automatic analysis and error question collection functions to realize the content landing of the four core modules. In terms of technical platform construction, rely on key technologies such as RPA, generative AI, big data analysis and virtual simulation to build an intelligent platform integrating resource management, personalized push, practical training monitoring and effect evaluation, improve data collection, learning portrait, personalized push and security protection mechanisms, adopt data encryption, hierarchical authority, off-site backup and other methods to ensure data security, and ensure the stable operation of the platform and functional adaptation to teaching needs through multiple rounds of testing and optimization. In the pilot

operation and optimization stage, select students of different grades to carry out pilot application for 1-2 semesters, collect use feedback through questionnaire surveys, teacher-student interviews and classroom observations, timely rectify and improve problems such as resource practicality, technical adaptability, functional fluency and teaching effect, and form a pilot summary report to provide practical support for comprehensive promotion.

4.3 Later Promotion and Operation & Maintenance Stage: Long-term Operation and Continuous Optimization

The later promotion and operation & maintenance stage aims at comprehensive application, long-term operation & maintenance and deepening collaboration, ensuring the continuous optimization of the resource database and stable exertion of teaching value, which is implemented by the linkage of universities, enterprises, industry associations and technology service providers. In terms of comprehensive promotion and application, deeply integrate the resource database into curriculum teaching, on-campus practical training, off-campus practice and accounting skill competitions, formulate teaching application guidelines, clarify use specifications and implementation paths; build a teacher exchange platform, carry out teaching seminars and experience sharing to improve teachers' digital-intelligent teaching ability^[14]; meanwhile, guide students to carry out autonomous and personalized learning through step-by-step practical training tasks and online practical training competitions to improve the utilization rate and teaching effectiveness of the resource database. In terms of long-term operation & maintenance mechanism construction, universities and technology service providers jointly set up a full-time operation & maintenance team, clarify operation & maintenance responsibilities and working processes. Universities are responsible for teaching feedback, demand sorting and effect evaluation; technology service providers are responsible for platform maintenance, fault troubleshooting, function upgrading and data security guarantee, and establish an operation & maintenance assessment and fund guarantee mechanism to ensure the long-term stable operation of the platform. In terms of deepening industry-education collaboration, further expand the scope of enterprise cooperation, jointly develop industry-characteristic practical training modules with industry associations, introduce the latest enterprise practical data and digital-intelligent scenarios to improve resource timeliness and industrial adaptability; improve the interest connection mechanism through co-construction of practice bases, joint talent training and joint application of education reform projects to enhance the enthusiasm of enterprise participation; promote the opening and sharing of resource databases to regional universities, build a cross-university resource sharing mechanism, and expand the radiation scope and social benefits of high-quality intelligent accounting practical teaching resources.

4.4 Key Points in the Implementation Process

The construction of an AI-driven accounting practical teaching resource database is a systematic project, which needs to run the three key points of teaching staff construction^[15], student guidance and quality control through the whole process of pre-preparation, mid-construction, later promotion and operation & maintenance to achieve precise connection and layered guarantee of all links. In terms of teaching staff construction, focus on improving teachers' digital-intelligent teaching ability, clarify training directions relying on cross-subject teams in the early stage, carry out AI tool practical training and teaching polishing around module development and platform construction in the mid-term, and continuously strengthen teachers' intelligent teaching literacy through enterprise on-the-job practice, expert on-campus teaching and teaching ability assessment in the later stage, realizing the synchronous improvement of teaching staff ability and resource database construction. In terms of student guidance, aim at promoting independent personalized learning, carry out publicity on resource database functions and digital-intelligent post needs in the early stage, carry out operation training and basic practical training guidance in the pilot stage in the mid-term, and formulate personalized learning paths combined with career development plans in the later stage to improve students' digital-intelligent practical operation ability and problem-solving ability through step-by-step tasks, practical training competitions and normalized Q&A. In terms of quality control, rely on the professional standards of industry associations to build a full-process audit system, conduct source audit on construction plans, quality standards and team configuration in the early stage, carry out full-process verification and problem cancellation management on resource development, platform construction and pilot operation in the mid-term, and carry out dynamic supervision on application effect, resource update, platform operation and industry-education collaboration quality in the later stage to ensure that the

resource database always conforms to the laws of accounting education and teaching and the needs of industrial digital-intelligent development, providing a solid support for cultivating interdisciplinary and application-oriented digital-intelligent accounting talents.

5. Guarantee Mechanism of AI-driven Accounting Practical Teaching Resource Database

5.1 Policy Guarantee: Strengthen Top-level Design and Improve Incentive Guidance

Relying on the policy orientation of new liberal arts construction, digital transformation of the accounting industry and higher education teaching reform, build a policy guarantee system with coordinated policy support and institutional norms to provide direction guidance and institutional support for the construction of AI accounting practical teaching resource databases. Universities can actively connect with the teaching reform requirements of national and local education authorities, incorporate the construction of AI accounting practical teaching resource databases into the school's key teaching reform projects and professional development plans, actively strive for special policy support and project approval, and clarify the construction positioning and development goals of the resource database. Meanwhile, improve the supporting management system for resource database construction, refine construction requirements, implementation standards and assessment rules, and reasonably define the responsibilities and authorities of each participating subject.

Improve the multi-party collaborative incentive mechanism, give appropriate inclinations and incentives to teachers who deeply participate in resource database development, course design and teaching application in professional title evaluation, teaching assessment and project application; for enterprises and technology service providers that actively participate in resource co-construction and provide high-quality practical resources and technical support, deepen cooperation through university-enterprise cooperation listing, practice base co-construction and joint talent training; give priority consideration to students with excellent performance in resource database application and learning in scholarship evaluation, internship recommendation and skill competitions, fully mobilize the enthusiasm of all parties to participate in construction and application, and form a benign operation mechanism of policy guidance, institutional constraints and incentive drive^[6].

5.2 Technical Guarantee: Consolidate the Platform Foundation and Strengthen Security Operation & Maintenance

Focusing on technical stability, functional adaptability and data security, jointly build a professional technical guarantee system with financial technology enterprises and AI technology service providers to provide technical support for the stable and efficient operation of the resource database. Rely on the technical advantages of enterprises to build a highly adaptive and reliable resource database technical platform, continuously optimize core functions such as resource retrieval, personalized push, intelligent evaluation and practical training monitoring combined with teaching practice and practical application needs, and improve platform operation efficiency and user experience. Establish a technical iteration and update mechanism, closely follow the development of cutting-edge technologies such as generative AI, large models and big data analysis, gradually integrate new technologies into resource database construction, and continuously improve the digital-intelligent function system of the resource database.

Establish and improve the data security guarantee system, adopt technical means such as data encryption, hierarchical authority management, off-site backup and access log recording to carry out full-process security protection for enterprise practical data, student practical training data and teaching resource data in the resource database, reducing risks such as data leakage, tampering and abuse. Clarify data use permissions, establish a data use approval process, and regulate unauthorized data transmission and commercial use. Form a professional operation & maintenance team composed of university technicians and enterprise engineers, establish a rapid response and disposal mechanism for technical problems, and timely detect and effectively deal with AI technology application adaptation problems and platform operation faults. Regularly carry out platform technical inspections, vulnerability repairs and function optimization to ensure the continuous and stable operation of the resource database technical platform.

5.3 Teaching Staff Guarantee: Improve the Training System and Build an Interdisciplinary Team

Based on the principles of long-term effectiveness and systematization, build a three-in-one teaching staff guarantee system

of “training+practice+introduction” to provide talent support for the continuous operation and teaching innovation of the resource database and alleviate the relative shortage of interdisciplinary accounting teachers in the digital-intelligent era. Establish a systematic teacher training system, incorporate AI accounting teaching ability into the teacher continuing education system, jointly formulate a standardized training plan with enterprises and industry associations, adopt a normalized training mode of “online learning + offline practice + assessment and certification”, carry out training around AI tool application, intelligent practical training course design, resource database platform operation and other contents to improve teachers’ teaching ability and professional literacy.

Build a teacher practice exercise platform, improve the long-term mechanism of teachers’ enterprise on-the-job practice, clarify the practice duration, content and assessment standards, and promote the deep integration of teachers’ teaching ability and industrial practical ability. Establish a cooperation mechanism for enterprise experts to enter campuses, employ practical experts and technical experts as part-time off-campus teachers to participate in resource database construction, optimization and practical training teaching. Optimize the structure of the teaching staff, appropriately introduce interdisciplinary talents in the fields of artificial intelligence, data science and accounting, enrich the resource database construction and operation & maintenance team, and gradually form a diversified teaching staff structure of “professional teachers + technical talents + practical experts”, providing talent supply guarantee for the long-term operation of the resource database.

5.4 Fund Guarantee: Broaden Financing Channels and Standardize Fund Use

Centering on the fund needs of resource database construction, operation & maintenance and upgrading, build a diversified fund raising mechanism combining “special financial funds + school supporting funds + enterprise investment + social funding” to provide stable financial support for the sustainable development of the resource database. Actively connect with teaching reform projects and special funds of national and local education and financial departments to strive for policy fund support; universities include resource database construction funds into the annual financial budget and arrange special supporting funds to ensure core construction needs; guide cooperative enterprises and technology service providers to participate in joint development and operation & maintenance in the form of funds, technologies and practical resources, and share construction costs through university-enterprise co-construction; actively expand social funding channels to form a diversified fund investment pattern.

Improve the fund management system, clarify the scope of fund use, approval process and reimbursement standards. Construction funds are mainly used for technical platform construction, teaching resource development, teacher training, equipment purchase, etc.; operation & maintenance funds are mainly used for platform maintenance, resource update, technical upgrading, etc., realizing special funds for special purposes. Establish a fund use supervision and performance assessment mechanism, conduct full-process supervision of fund use by the school’s financial and audit departments, regularly carry out fund use benefit evaluation, and link the evaluation results with subsequent fund arrangements to improve fund use efficiency and avoid resource waste.

5.5 Dynamic Update Guarantee: Establish a Linkage Mechanism and Ensure Resource Timeliness

Aiming at the timeliness and practicality of resource content, build a dynamic update guarantee mechanism of “industrial linkage + teaching feedback + technology iteration” to promote the continuous adaptation of resource database content to the development trend of the accounting industry and the actual teaching needs of universities. Establish an industrial dynamic linkage mechanism, build a normalized information communication channel with accounting industry associations, large and medium-sized enterprises and financial technology enterprises, timely grasp the development of accounting digital-intelligent technologies, changes in enterprise practical scenarios and competency requirements of digital-intelligent accounting positions, and provide industrial basis for resource database update. Arrange special personnel to be responsible for industrial information collection and analysis, and regularly form industrial dynamic reports to clarify the key points and directions of resource update.

Establish a teaching feedback analysis mechanism, timely collect opinions and suggestions in the application process of the resource database through questionnaire surveys, teacher-student interviews, teaching effect evaluation, etc., analyze the problems existing in content and functions, and put forward optimization directions combined with teaching reform needs.

Establish a technology iteration adaptation mechanism, closely follow the development achievements of technologies such as generative AI and large models, timely integrate new technologies into resource database construction, and improve the digital-intelligent level of the platform. Formulate a normalized update system for the resource database, clarify the update subject, update cycle, update process and quality standards, and implement small quarterly optimization and annual overall upgrading. Establish a resource update quality audit mechanism, invite industrial and enterprise experts to professionally check the updated content, and form a closed-loop management system of “industrial information collection - teaching feedback analysis - resource content update - quality audit launch - application effect evaluation”.

5.6 Ethical and Security Guarantee: Regulate Technology Application and Keep the Security Bottom Line

Based on the dual requirements of AI technology application and data security management, build an ethical and security guarantee system combining “institutional norms + process control + supervision and assessment” to promote the compliant, orderly and safe operation of the resource database. Formulate ethical norms for AI technology application in the resource database, clarify the application boundaries and operation guidelines of AI in teaching resource generation, practical training teaching, intelligent evaluation and other links, avoid false and distorted accounting practical cases, standardize the design and application of intelligent evaluation algorithms, ensure the fairness and transparency of algorithms, and prevent technology application from deviating from teaching objectives and accounting industry norms. Reasonably define the responsibility division of AI technology application to reduce teaching problems and ethical risks caused by algorithm vulnerabilities and improper technology use.

Improve the data security management system, standardize the whole process of data collection, storage, use and sharing^[17], establish data hierarchical classification standards and authority management mechanisms, implement hierarchical protection for enterprise practical data, student learning data and practical training behavior data, and strictly prohibit unauthorized data transmission, commercial use and leakage. Anonymize and desensitize students’ personal information and practical training data to effectively protect students’ information security. Establish a data sharing approval mechanism, perform strict approval procedures when sharing data across subjects and universities to ensure compliant and controllable data sharing.

Set up an ethical and security supervision team composed of experts from universities, enterprises, industry associations and legal fields, regularly carry out supervision and inspection on AI technology application and data management, focus on investigating ethical risks and security hidden dangers, timely urge rectification of violations and establish rectification ledgers. Incorporate ethical and security management into the resource database operation & maintenance assessment system, clarify the management responsibilities of the operation & maintenance team, and link the assessment results with work performance and subsequent cooperation qualifications to promote the implementation of ethical norms and security systems and keep the ethical and security bottom lines of resource database construction and operation.

6. Conclusion

Against the dual background of the digital-intelligent transformation of the accounting industry and the construction of new liberal arts, focusing on the deep integration of artificial intelligence and accounting practical teaching, this study comprehensively uses literature research, case analysis, questionnaire survey and expert interview methods to systematically explore the construction mode and implementation path of the AI-driven accounting practical teaching resource database. Through theoretical sorting, current situation analysis, mode construction, path design and mechanism establishment, the core research conclusions are drawn as follows:

The deep integration of AI technology and accounting practical teaching resource database provides an innovative path to solve the core dilemmas in the development of current practical teaching such as lagging resource update and shallow technology application. At present, the construction of accounting practical teaching resource databases in China has core problems such as lagging content update, shallow technology application, insufficient industry-education collaboration and lack of personalized services. The technical advantages of AI in data processing, scenario simulation, intelligent generation and personalized push can precisely match the practical needs of resource database construction. Through technology empowerment, the digital-intelligent, scenario-based and dynamic upgrading of the resource database can be realized,

promoting the precise adaptation of accounting practical teaching to the development trend of industrial digital-intelligence. An AI-driven accounting practical teaching resource database construction mode of “Five Principles + One Core, Four Modules, Three Supports + Four-dimensional Operation” is constructed. The study clarifies the five construction principles of practicality, intelligence, systematicness, dynamism and openness, builds a core framework with “cultivating digital-intelligent practical ability of accounting majors” as the core, four modules of basic accounting practical training, intelligent scenario practical training, cases and question banks, teaching staff and training as content carriers, and three supports of technology, subject and evaluation as guarantees, and designs a four-dimensional operation mode of “university-enterprise collaborative co-construction, AI technology empowerment, dynamic update, personalized push”, realizing the systematic, scientific and practical construction of the resource database and providing a clear mode guide for the landing construction of the resource database.

A phased implementation path of “Pre-preparation - Mid-construction - Later Promotion and Operation & Maintenance” is designed and the core key points are clarified. Combined with the actual teaching of universities and the requirements of industry-education collaboration, the study plans the pre-preparation stage of demand research, team formation and plan formulation, the mid-construction stage of resource development, technology integration and pilot optimization, and the later promotion and operation & maintenance stage of comprehensive promotion, long-term operation & maintenance and industry-education deepening. Meanwhile, the three key points of teaching staff construction, student guidance and quality control are run through the whole implementation process, clarifying the core work, responsible subjects and operation standards of each stage, transforming the resource database construction from macro ideas into specific steps that can be landed and implemented.

An all-round guarantee mechanism of “Policy + Technology + Teaching Staff + Fund + Dynamic Update + Ethics and Security” is established. Aiming at various restrictive factors in the construction and operation of the resource database, a guarantee mechanism is built from six dimensions: policy top-level design, technical platform support, interdisciplinary teacher training, diversified fund raising, resource dynamic update and ethical security control, forming a guarantee system with mutual support and coordinated efforts of various mechanisms, solving policy barriers, technical bottlenecks, talent shortages, insufficient funds and other problems in the construction of the resource database, ensuring the long-term construction and stable operation of the resource database, and realizing the continuous release of teaching value.

The full-link deep integration of AI technology and accounting practical teaching resource database can effectively optimize the construction shortcomings of traditional resource databases, promote the transformation of accounting practical teaching from “traditional static simulation” to “intelligent dynamic simulation”, from “unified teaching” to “personalized training”, and from “single university construction” to “industry-education collaborative co-construction”. The models, paths and guarantee mechanisms constructed in the study enrich the research results of “digital-intelligence + accounting education”, improve the theoretical system of accounting practical teaching resource construction, provide direct practical references for universities to build digital-intelligent and scenario-based accounting practical teaching resource databases, and also provide practical support for promoting the cultivation of digital-intelligent interdisciplinary accounting talents, alleviating the mismatch between supply and demand in the accounting talent market, and helping the digital transformation of the accounting industry.

Funding

1. Project of China General Chamber of Commerce: 2025 Project of the 14th Five-Year Plan for National Business Education, Training and Scientific Research—Paths and Dissemination Methods of AI-enabled Classroom Revolution in Accounting Major (Project No.: SKKT-25026)
- 2.. Project of China General Chamber of Commerce: Project of the 14th Five-Year Plan for National Economic and Management Teaching and Scientific Research: Research on Innovative Paths of Intelligent Accounting Scientific Research Driven by DeepSeek (Project No.: JGJKYB-25005)

Conflict of Interests

The authors declare that there is no conflict of interest regarding the publication of this paper.

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