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Sustainable Development and Effect Evaluation of School-Enterprise Cooperative Talent Cultivation Models for Accounting Majors in the Digital-Intelligence Era

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Abstract: New technologies such as big data and artificial intelligence are reshaping the connotations and boundaries of the accounting profession. Accounting verification functions have been largely replaced by automated tools, while functions including data analysis and decision-making support are growing rapidly. Accordingly, school enterprise cooperation has become a critical path for talent cultivation reform of accounting majors. Focusing on the current status of school enterprise cooperation for accounting majors in the digital intelligence era, this paper sorts out the reshaping logic of accounting talent competency structure driven by digital intelligence transformation, as well as prominent problems in major domestic cooperation models. In response to the above mentioned problems, this paper puts forward a "Five in One" sustainable development mechanism framework covering incentive stimulation, resource sharing, benefit distribution, risk prevention and communication coordination. Moreover, this study designs a four dimensional evaluation system, which includes students' development quality, employment and social recognition, platform operation benefits and mechanism operational health. It aims to transform school enterprise cooperation from "short term projects" to "long term strategies".

Keywords: Digital-Intelligence Era; Accounting Major; School-Enterprise Cooperation; Sustainable-Development Mechanism; Effect Evaluation

1. Introduction

The new round of scientific and technological revolution has pushed human society into a new stage featuring in-depth integration of digitization and intelligence, with data becoming a key factor of production. For the accounting industry, technologies such as financial robots, intelligent audit and big-data risk control have been applied on a large scale. This revolution is changing the underlying logic of accounting work and posing systematic challenges to talent cultivation for accounting majors in universities. The Chinese government has successively issued documents including Opinions on Deepening the Integration of Industry and Education [1] and Implementation Plan for Empowering and Upgrading Vocational Education for Industry-Education Integration (2023-2025), so as to promote the organic connection of the education chain, talent chain, industrial chain and innovation chain, and support the construction of industry-education integration communities and joint school-enterprise innovation platforms [2]. Nevertheless, gaps remain between policies and realities. A considerable number of cooperation activities stay at a superficial level, and agreements lack stipulations on rights, obligations and operational rules. It has become an urgent research subject to build a cooperative education model that can operate sustainably, adapt dynamically and undergo objective evaluation.

2. Current Situation and Demand Analysis of School-Enterprise Cooperative Talent Cultivation for Accounting Majors in the Digital-Intelligence Era

2.1 Reshaping of Accounting Industry and Changes in Competency Requirements for Talents Driven by Digital-Intelligence Technologies

Digital-intelligence technologies are rewriting the organization mode of accounting work. Manual-based accounting procedures are gradually replaced by cloud-service modes, and routine financial processing as well as partial decision-making tasks are undertaken by intelligent financial robots and visualization

systems. A deeper change lies in the shift of work priorities: as repetitive labor is taken over by machines, accounting professionals create more value through data interpretation, business participation and forward-looking risk judgment.

Corresponding to this shift, employers are transforming their competency requirements from "verification-oriented talents" to "digital-intelligence compound talents" [3], which present clear hierarchical characteristics. At the basic level, talents are expected to master digital operation platforms. The importance of manual bookkeeping and accounting is declining, replaced by proficient operation of ERP systems, financial sharing platforms and RPA tools, alongside an understanding of the operational logic of automated workflows. At the core level, data analysis and business-finance integration capabilities are required. Practitioners need to adopt tools such as Python and Power BI for modeling and comprehend the financial logic behind business activities.

At the advanced level, strategic decision-making support and risk early warning capabilities are essential. Practitioners are supposed to shift from "value recording" to "value creation", and convert financial analysis into actionable suggestions for management. In addition, self-directed learning and knowledge updating serve as fundamental qualities running through the three above-mentioned levels. However, enterprise feedback indicates that fresh graduates generally lack hard skills such as programming and data analysis, as well as soft qualities including critical thinking and cross-domain communication. Such supply-demand mismatch constitutes the core proposition for reform.

2.2 Major School-Enterprise Cooperation Modes for Accounting Majors in Domestic Universities

In recent years, domestic universities have carried out extensive explorations on school-enterprise cooperation for accounting majors and formed multiple representative modes.

The School of Accounting at Jilin Business and Technology College, in cooperation with Newdao Technology, has constructed a talent cultivation path featuring "Broad-Foundation, Technology-Integration, Personalization and Ideological-Political Integration" [4], adding nine digital-intelligence courses such as "Big Data Financial Analysis", "Financial Shared Services", and "Intelligent Auditing Practice", raising the proportion of such courses to 35%.

The School of Finance and Economics at Anhui Industrial and Economic Vocational and Technical College has innovatively constructed the "2345" [5] talent cultivation model, namely dual-skill cultivation, three-specialty integration, four-party collaboration, and five-dimensional integration, giving full play to the educational subject function of "four-party collaboration" among government, enterprises, industry associations, and schools.

Guangzhou Huashang College has constructed a new digital-intelligence accounting talents cultivation model of "three-dimensional drive and three-stage progression" [6], making coordinated efforts from the three dimensions of cultivation objectives, curriculum system, and platform carriers, and designing a competency progression path from basic-skills training to professional comprehensive training and then to project practical training.

2.3 Prominent Dilemmas Faced by School-Enterprise Cooperation

Based on investigations among some undergraduate universities offering accounting programs, four structural dilemmas are identified for current school-enterprise cooperation talent cultivation models.

First, cooperation lacks depth and supporting coordination mechanisms are incomplete [7]. Most school-enterprise cooperation remains superficial, merely providing internship bases or inviting enterprise experts to deliver lectures. In-depth cooperation such as joint curriculum development, co-research on projects and joint formulation of standards are rarely realized. Some cooperation is superficial in nature: cooperation is deemed completed once a plaque is unveiled or a contract is signed. Cooperation agreements contain few specific provisions on cooperation content, rights and obligations of all parties and operational mechanisms. The phenomenon of "universities being eager while enterprises remain passive" is widespread. Enterprises participate mostly out of a sense of social responsibility or short-term relationship maintenance, rather than rational choices based on long-term strategic interests.

Second, practical teaching is seriously

disconnected from industry demands. Updates to curriculum content lag behind industry development, and digital-intelligence technologies are not sufficiently integrated into teaching [8]. Core traditional accounting courses in most universities still focus on cultivating verification-oriented skills including accounting standard interpretation, accounting procedures and financial statement preparation. A complete curriculum chain for systematic cultivation of digital-intelligence capabilities such as data analysis, intelligent decision-making and risk early warning has not yet been formed. On-campus practical training mainly involves manual bookkeeping and simple computerized accounting operations. Nevertheless, corporate financial work has generally stepped into the era of financial sharing, intelligent accounting and big-data analysis. Such technological gaps give rise to an obvious competency gap between what students learn at university and what enterprises require.

Third, the talent-training quality evaluation system is imperfect. Existing evaluation systems are mostly university-centered and rely on a single evaluator perspective, lacking in-depth participation from multiple stakeholders such as enterprises and industry organizations. Evaluation indicators concentrate on easily quantifiable items such as course grades and certificate acquisition, while core indicators such as students' digital-intelligence capabilities, professional ethics, and workplace adaptability are neglected. Hence, evaluation results cannot comprehensively and truly reflect the actual talent-training effects.

Fourth, mechanisms for sustainable development are absent. School-enterprise cooperation lacks long-term operational guarantees and institutional support, resulting in insufficient stability and continuity. Without clear input-output measurement rules, universities and enterprises fail to reach consensus on how to measure inputs and outputs. Without systematic risk-prevention mechanisms, both sides lack forward-looking plans for predicting and responding to risks such as technological updates, personnel turnover, and policy adjustments. Such institutional deficiencies make school-enterprise cooperation vulnerable to external interference, and cooperation generally has a short life cycle.

3. Construction of Sustainable-Development Mechanisms for School-Enterprise Cooperation of Accounting Majors in the Digital-Intelligence Era

To transform school-enterprise cooperation from "short-term projects" to "long-term strategies", and from "shallow collaboration" to "in-depth integration", institutional design is essential. Collaborative education theory highlights shared responsibilities and complementary advantages between educational institutions and employers [9]. Stakeholder theory indicates that the sustainability of cooperation depends on whether the demands of multiple stakeholders can be identified, responded to, and balanced. Accordingly, this paper constructs a "Five-in-One" mechanism framework consisting of an incentive mechanism, a resource-sharing mechanism, a benefit-distribution mechanism, a risk-prevention mechanism and a communication-coordination mechanism.

3.1 Incentive Mechanism

The incentive mechanism addresses the fundamental question of "why to cooperate". Unlike administratively mandated tasks, the vitality of school-enterprise cooperation lies in whether both sides can achieve expected value. It is critical to break the disconnect between universities and enterprises and identify shared interests, so as to build an incentive mechanism that consolidates cooperation consensus through value co-creation.

First, shared visions provide directional guidance. Universities and enterprises should reach consensus on strategic objectives and formulate a cooperation program that is both inspirational and binding. It should be neither a unilateral statement of university training objectives nor a unilateral list of enterprise recruitment needs. For the accounting major, the cooperation platform can be jointly positioned as "a hub for regional digital-intelligence finance and economics talent cultivation" and "a think tank for enterprises' digital transformation". Accordingly, the training objectives should target application-oriented accounting talents with a solid professional foundation, strong digital-intelligence competency, and prominent innovation awareness.

Second, structural design stimulates intrinsic incentives. For universities, the introduction of

enterprise technical platforms and desensitized real-world data can improve practical teaching quality; enterprise mentors and real-world project training help enhance students' employability. For enterprises, in-depth participation in the whole training process brings priority in talent recruitment, which helps secure talents in advance and reduce recruitment and training costs. Universities can also support enterprises' technological research through academic resources.

Third, combined incentive policies should be implemented, and enterprises' education-related investment should be incorporated into corporate social responsibility assessment.

3.2 Resource-Sharing Mechanism

Resource-sharing constitutes the core content of cooperation, aiming to amplify factor value through two-way flows. Its core is not simple superposition of resources, but the value-added effects generated through optimized allocation and cross-boundary resource flows. The mindset of "universities unilaterally acquiring resources" should be abandoned in order to achieve comprehensive interconnection of hardware, data, faculty, and projects.

In terms of hardware and data, platforms equipped with RPA financial robots, intelligent financial cloud platforms, and BI visualization tools should satisfy both teaching and research demands, following the principle of "teaching priority while taking research into account". Enterprises introduce desensitized business data and case libraries into teaching platforms, enabling students to complete practical training, including data processing and early risk warning, in real-world simulation environments. Students' outputs can in turn provide references for enterprises' process optimization. In terms of faculty and projects, institutional two-way temporary assignment systems should be established: key enterprise personnel are employed as industry professors or practical supervisors to deliver practical courses, develop cases, and supervise graduation projects, thereby alleviating the shortage of dual-qualified teachers. Full-time university teachers regularly take temporary positions in enterprises, participating in actual business operations as financial consultants or data analysts and bringing real-world problems back to the classroom. Authentic corporate research projects are transformed into teaching resources.

3.3 Benefit-Distribution Mechanism

Benefit-distribution is the most sensitive and dispute-prone aspect of cooperation. Clear rules are required to stabilize expectations regarding cooperation. Its core lies in establishing fair, and predictable rules for inputs and outputs while adhering to the risk-sharing principle.

First, inputs and outputs should be clearly defined. Inputs including capital, equipment, data resources and man-hours, should be classified and registered with quantifiable conversion standards. Outputs should be categorized into talent cultivation, technical services and intellectual property, with respective agreements on ownership and benefit-sharing ratios.

Second, ownership of intellectual property should be reasonably stipulated. Ownership and access rights of jointly developed curriculum resources, textbooks, case libraries, and data products should be determined by the degree of contribution, distinguishing job-related achievements from cooperative achievements.

Third, talent-training outcomes should be shared. Students' right to choose jobs should be balanced against enterprises' priority in talent recruitment. Enterprises can enhance their attractiveness through scholarships, internship positions and joint supervision, yet should not restrict students' freedom of career choice.

3.4 Risk-Prevention Mechanism

Risks cannot be completely eliminated, yet resilience to disruptions can be enhanced through forward-looking contingency plans. For technological iteration risks, regular assessment and update systems for curricula and platforms should be established, and modular architecture should be adopted to lower replacement costs. For cooperation interruption risks, exit arrangements should be included in medium- and long-term agreements, specifying plans for asset disposal, data handover and placement of students in training. For training-quality risks, quality standards and early warning thresholds should be set at key nodes, with phased assessment and dynamic support measures implemented. For information-security risks, systems for data desensitization, hierarchical authorization and access traceability should be built. For personnel turnover risks, team-based project

acceptance and A/B role arrangements for key posts should be adopted to reduce reliance on individual staff members.

3.5 Communication-Coordination Mechanism

The communication-coordination mechanism aims to reduce friction caused by information asymmetry and lower coordination costs through institutionalized interactions. Regular communication channels should be established through joint meetings, regular semester meetings, and special working groups to ensure consensus on progress and problems. Hierarchical coordination should be implemented: the strategic layer reviews development directions; the administrative layer coordinates resources and progress; the executive layer delivers courses, projects and activities. A unified information-sharing platform should be constructed for traceable processes, alongside emergency response channels for unexpected events. Matched with the above-mentioned mechanisms, the curriculum system should adopt a three-tier progressive structure: the basic tier consolidates fundamental professional knowledge; the intermediate tier integrates data analysis and intelligent finance content; the top tier realizes competency integration through real-world projects.

4. Construction of the Effect Evaluation System for School-Enterprise Cooperative Talent Cultivation for Accounting Majors in the Digital-Intelligence Era

4.1 Principles for Constructing the Evaluation Indicator System

Four principles should be followed in designing the evaluation system. The principle of scientificity requires each indicator to have a solid theoretical foundation and observable measurement standards. The principle of systematicness covers the whole chain of input, process, output and influence, focusing not only on what students acquire but also on platform operation and mechanism health. The principle of operability requires data to be stably collected through conventional channels with unified statistical standards. The dynamic principle demands an open system where indicators and weights can be adjusted with technological evolution.

4.2 Framework Design of the Evaluation Indicator System

Based on the above principles, this paper constructs an indicator system from four dimensions.

First, the dimension of students' development quality includes indicators such as assessment scores for digital-intelligence tool operation and data-processing capabilities, comprehensive performance in business-finance integration and decision-making support, professional ethics and self-directed learning awareness, and competition awards and innovation outputs.

Second, the dimension of employment and social recognition covers graduation employment rate, job-major matching rate, employer satisfaction, starting salary and promotion speed, retention rate, and enterprises' willingness for follow-up cooperation.

Third, the dimension of platform operation benefits involves utilization rates of equipment and software platforms, update frequency of real-world data and cases, the number of teaching cases and practical training tasks transformed from real-world projects, revenue from technical services and training, and the number of outputs such as courses and textbooks.

Fourth, the dimension of mechanism operational health includes agreement fulfillment rate, input availability rate, problem resolution rate, frequency and timeliness of risk incident disposal, cooperation duration, and renewal willingness. It converts vague judgments of “cooperation health” into observable and comparable signals.

4.3 Selection and Application of Evaluation Methods

Firstly, quantitative and qualitative evaluation should be combined. For quantifiable indicators such as competency assessment scores, employment statistics, and equipment utilization rates, scale-based measurement and statistical analysis are adopted to obtain objective results. For hard-to-quantify dimensions including professional ethics, collaboration competence, and innovation potential, qualitative evidence is obtained through in-depth interviews, growth portfolios and work-sample evaluation. The mutual verification of two types of evidence avoids the pitfalls of “data-only” or “impression-only”

evaluation.

Secondly, process evaluation and outcome evaluation should be integrated [10]. Attention should be paid not only to outcomes at graduation, such as employment and competency performance, but also to phased performance in the training process. A full-cycle data collection mechanism should be built, covering the period from students' admission to their post-graduation employment. Thirdly, multiple stakeholders should participate in evaluation. Evaluators include students, teachers, enterprise mentors, employers, and industry organizations. Composite evaluation conclusions are generated by assigning different weights to different participants.

4.4 Application of Evaluation Results and Continuous Improvement

The ultimate value of evaluation lies in improvement. A closed-loop mechanism of "evaluation-feedback-improvement-re-evaluation" should be established. After each round of evaluation, conclusions are decomposed by dimension and fed back to the corresponding responsible parties, with items requiring rectification and deadlines clarified. Curriculum deficiencies should be addressed through timely revision of contents and teaching approaches; resource allocation problems should be solved by adjusting input structures and sharing rules; institutional obstacles should be tackled by improving clauses in cooperation agreements. In this way, talent cultivation can shift from experience-driven mode to evidence-driven mode.

5. Conclusion

Digital-intelligence transformation is driving systematic reforms in talent cultivation modes for accounting majors, and school-enterprise cooperation serves as a critical path for responding to this transformation. This paper conducts research at three levels: analysis of the current situation and demand, mechanism construction, and effect evaluation. It proposes the "Five-in-One" sustainable development mechanism framework as well as a four-dimensional evaluation system. The research demonstrates that institutional safeguards sustain long-term cooperation, while the evaluation system converts cultivation effectiveness into observable and comparable signals. Together, they promote the evolution of school-enterprise cooperation from experience-driven practice toward evidence-driven practice. Only with coordinated efforts from governments, universities, and enterprises to continuously optimize mechanisms and evaluation systems can high-quality cultivation of digital-intelligence accounting talents be realized.

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