

# *Exploration of Accounting Talent Cultivation Mode Based on Industry-Teaching Integration*

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**Keywords:** Educational innovation; accounting talent cultivation; industry-education integration; hierarchical analysis; comprehensive weights

**Abstract:** The current talent cultivation approach for accounting majors in colleges and universities has various shortcomings. In order to address these issues, enhance the progress of accounting majors, and refine the talent cultivation approach, this study proposes an accounting talent cultivation model that integrates industry and education. Using the hierarchical analysis method, a model is constructed and analyzed. Considering the existing challenges in accounting talent cultivation at higher vocational institutions, an evaluation model is established. This model encompasses four key indicators: talent cultivation, cultivation direction, curriculum, and teaching conditions. Weight and consistency tests are performed for each indicator to determine their relative importance in accounting talent cultivation. In the analysis of the case application, practical ability attains the highest comprehensive weight of 0.2202, followed by the faculty team with a weight of 0.2184. The third-highest is the reinforcement of ideological and moral quality, with a comprehensive weight of 0.1383. The average rating from leaders, teachers, students, and enterprises is 77.5, indicating that the university's accounting talent cultivation model is at a moderate level.

## 1. Introduction

Currently, global economic growth has slowed, and uncertainties have risen. Enterprises urgently seek to boost market competitiveness through increased innovation and higher technological value in their products. Colleges and universities serve as hubs for accounting high-tech talent, consistently supplying society and enterprises with skilled professionals [1-3]. Enterprises act as essential platforms for accounting talents from academic institutions to realize their value. The integration of industry and education is crucial for enhancing the independent innovation capability of universities and localities [4]. Local colleges and universities can achieve sustainable development by leveraging their proximity to the community, continuously improving resources for postgraduate training based on local economic and social development, and strengthening the link between teaching and research [5]. It is imperative for colleges and universities to align with industrial development, establish a foundational model for industry-teaching integration education, and prioritize the training of innovative and applied accounting talents [6].

## 2. Related Words

With the arrival of the digital economy, the economic environment, technological environment, competitive environment and other external environments for the survival of enterprises have undergone radical changes, and the production and operation mode and coping strategies of enterprises have also changed [7]. Based on this, it is necessary and urgent to innovate the accounting personnel training mode based on the integration of industry and education. At present, some scholars have already studied the training mode of innovative accounting talents.

Xuan Cao pointed out that under the new economic normal, it is more necessary for the technical talents cultivated by vocational education to contribute to the economic development. He puts forward the countermeasures to improve the talent cultivation mode of Shandong accounting vocational education through industry-teaching integration: (1) Constructing the professional setting of "main specialty" + "flexible direction". (2) Integration of enterprise demand into curriculum structure. (3) Reform of teacher structure, with entrepreneurs joining the teaching team and teachers participating in enterprise practice. (4) Integration of enterprise standards into student evaluation system. The article believes that the concept of integration of industry and education should be carried through all aspects of talent training, and that the educational elements such as professional setting, curriculum construction, teacher construction, and student evaluation should be connected with the industry in order to realize the development of the deep integration of talent training and industry [8].

Can Cai highlights the impending AI era amid the big data revolution. While colleges see a surge in accounting interest, they play a crucial role in training accounting talents. The shift from traditional to modern accounting prompts financial professionals to transition to management roles. Navigating the information age requires transforming financial management training using modern technology for AI integration. The challenge lies in innovating intelligent classroom teaching methods. Addressing AI's impact on the accounting industry, the article assesses the current state of accounting talent cultivation, outlining challenges. It proposes enhancing the cultivation mode in terms of structure, planning, objectives, and methods [9]. Tiantian Gu notes China's transition into the Internet society, prompting changes in the accounting industry. Traditional computational accounting falls short, necessitating a shift in talent training at colleges. The proposal includes integrating Internet accounting thinking, utilizing online platforms, and fostering collaboration with government entities, listed companies, and other stakeholders [10].

Feimei Liao et al. highlight the impact of AI progress on China's traditional industries, including accounting. Using the triple helix theory, they propose cultivating versatile digital intelligent accounting talents with data analysis and processing skills. The study emphasizes a collaborative education model involving government, industry, and academia to efficiently achieve talent cultivation goals in the big data era [11]. Qifeng Wei et al. stress the necessity of cultivating innovative talents in the face of technological and industrial shifts, a crucial aspect of new liberal arts development. In the VUCA era, traditional accounting talent training falls short. The article suggests optimizing education goals, introducing tech-oriented instructors, creating integrated courses, and promoting government-industry-school collaboration for innovative talent development [12].

Shuhua Liu and Xin He pointed out that in the context of the big data era, artificial intelligence rapidly covers the accounting field, and financial robots come into being. The accounting industry urgently needs to improve the professional quality of accounting talents, and the accounting professional training mode in colleges and universities urgently needs to be transformed and upgraded. The article in the analysis of the current undergraduate accounting professional training mode problems based on the OBE as a new perspective on the development of talent training model,

and combined with the Internet changes in the demand for accounting talent big data and intelligent accounting research market, to build a "big data + intelligent accounting" professional training framework model for the accounting professional training of colleges and universities. Cultivation to provide new ideas [13]. Laizhi Wang explores industry-education integration in the information industry, focusing on content, methods, and mechanisms. Using Chongqing C Vocational College as a case study, the article analyzes the correlation between the practical teaching system and student satisfaction. Through a questionnaire distributed to 427 students, SPSS26.0 software is employed for analysis, providing insights into optimizing the practical teaching system for information industry talent training in higher vocational education [14].

Accounting is a knowledge-intensive field requiring practical experience. Challenges in university information technology systems include duplication, expansion limitations, and lack of uniform standards. To address these, the paper suggests an industry-education integration model for accounting personnel training, aiming to enhance practical skills and overcome information system issues [15-16].

### **3. Methods**

#### **3.1 Enhancing university digital infrastructure for integrated corporate finance environment**

Amid the new business discipline, the focus shifts to cultivating enterprise-needed accounting talents. To align with economic growth, timely updates to training programs, infrastructure, and intelligent teaching methods are vital. Industry-finance integration, on-site training, and internships enhance students' practical understanding. Accounting teachers guide exploration of principles, applying theory to practice. New business courses, breaking traditional barriers, foster diversified qualities. The revised training program emphasizes multidisciplinary knowledge integration for enriched theoretical and practical foundations.

#### **3.2 Collaborate with digital firms for industry-education deep integration**

Cultivating accounting talents now involves collaboration with enterprises, not just a university task. Deep cooperation with accounting firms, financial software companies, and others is crucial for developing digital and intelligent accounting professionals. Industry-education integration bases enable universities and businesses to jointly cultivate high-quality, industry-fusion accounting talents, meeting society's needs in the digital era.

#### **3.3 Creating a "dual-teacher" teaching team and realizing cross-fertilization of disciplines**

Teachers cultivating high-quality accounting talents must possess strong professional qualities, practical experience, and an innovative mindset. In the digital era, educators need broad vision, deep knowledge, and proficiency in integrating modern information technology. Encouraging teachers' involvement in practical work and interdisciplinary activities enhances their abilities, promoting a closed loop for comprehensive accounting talent training [15].

### **4. Results and Discussion**

#### **4.1 Collaborate with digital firms for industry-education deep integration**

##### **4.1.1 Hierarchical analysis method**

Hierarchical analysis dissects complex issues by breaking them into distinct elements aligned

with the overarching objective. It constructs a multi-tiered analytical model by combining these elements based on their interrelated influence levels. The analysis comprises three primary tiers, with the topmost level representing the ultimate goal to be attained [17]. Refer to Figure 1 for an illustrative flowchart.

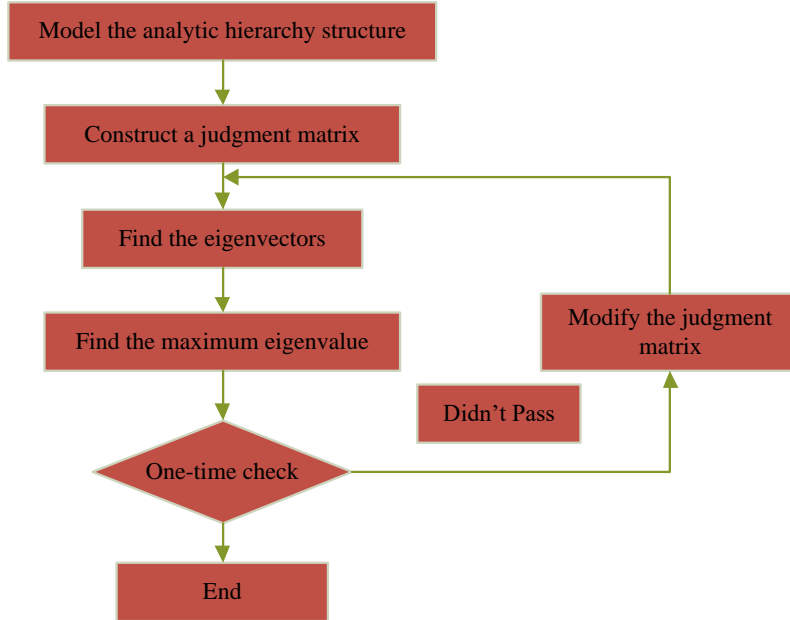


Figure 1: Flow chart of AHP

- 1) Set up system hierarchy (A, B, C levels).
- 2) Create judgment matrix, compare pairs at each level.

The judgment matrix is  $A = (a_{ij})_{n \times n}$ . There exist for any  $i, j = 1, 2, \dots, n$ ,  $a_{ij} > 0$ ,  $a_{ji} = 1/a_{ij}$ ,  $a_{ii} = 1$ .

- 3) Calculate peer indicator weights:

$$W_i = \frac{1}{n} \frac{\sum_{j=1}^n a_{ij}}{\sum_{k=1}^n a_{kj}} \quad (1)$$

- 4) Calculate the maximum eigenvalue of this matrix  $\lambda$ :

$$\lambda_{\max} = \sum_{i=1}^n \frac{B_i W_i}{n W_i} \quad (2)$$

- 5) Perform a consistency check:

$$CR = \frac{CI}{CR} = \frac{\lambda_{\max} - n}{n - 1} \quad (3)$$

#### 4.1.2 Calculation of weights of evaluation indicators

The subsequent equation is utilized for determining the weights:

$$s.t \sum_{i=1}^n w_i = 1 \quad w_i \geq 0, i = 1, 2, \dots, n \quad (4)$$

An application of the Lagrange multiplier method:

$$L = \min \sum_{i=1}^n \sum_{j=1}^n (a_{ij} w_j - w_i)^2 + \lambda \left( \sum_{i=1}^n w_i - 1 \right) \quad (5)$$

$$\begin{aligned} \frac{\partial L}{\partial w_i} = & -2(a_{i1} w_1 - w_i) - 2(a_{i2} w_2 - w_i) - L - 2(a_{in} w_n - w_i) + 2a_{i1} w_1 - w_1 + \\ & 2a_{2i} (a_{2i} - w_2) + L + 2a_{nj} (a_{nj} w_j - w_n) + \lambda = -2(a_{i1} + a_{i2}) w_1 - 2(a_{i2} + a_{2i}) w_2 - L + \\ & \left[ 2(n-1) + 2 \sum_{\substack{i=1 \\ j \neq i}}^n a_{ji} \right] w_i - L - 2(a_{in} + a_m) w_n + \lambda \end{aligned} \quad (6)$$

To enhance weight accuracy, set conditions when the objective function minimizes:

$$\begin{aligned} \frac{\partial L}{\partial w_j} = & 0(i = 1, 2, \dots, n) (a_{i1} + a_{i2}) w_1 - 2(a_{i2} + a_{2i}) w_2 - L + \\ & \left[ 2(n-1) + 2 \sum_{\substack{i=1 \\ j \neq i}}^n a_{ji} \right] w_i - L - 2(a_{in} + a_m) w_n + \lambda = 0 \end{aligned} \quad (7)$$

$\sum_{i=1}^n w_i = 1$  establishing a system of  $w_1, w_2, L, w_n, \lambda$  linear equations and combining it with Matlab software for calculations, the  $w_1, w_2, L, w_n, \lambda$  value can be calculated, which is one of the established methods. The specific weight values of each indicator are shown in Table 1.

Table 1: Weight values of indicators in each layer

Directive Level B	Allocation Factor	Indicator layer C	Weighting value
Strategic Focus on Developing Talent	0.1331	Theoretical	0.3329
		Practical	0.6716
Professional Curriculum	0.1016	Courses categorized as Professional, Practical Training, and Elective.	0.2105 0.6584
Talent Cultivation Capability	0.4598	Academic expertise, Applied Skills, Ethical Values, and Innovative Capabilities.	0.1297 0.1708
Teaching conditions construction	0.2891	Faculty Teaching Equipment	0.4483 0.2574

## 4.2 Case Study of Accounting Talent Training Model Application

### 4.2.1 Consistency testing

In order to make the judgment matrix more reasonable, here it is also necessary to test its consistency, i.e., to find the value of the CI indicator of the matrix, which is given by the formula

$$CI = \frac{\lambda_{\max} - n}{n - 1}$$

$\lambda_{\max}$  in Eq. is the maximum eigenroot value, and  $n$  in Eq. builds a matrix of numerical order. Knowing the CI value also requires knowing the CR value; the CR value is the result of the consistency test. The formula is  $CR = \frac{CI}{RI}$ .

Where RI is the constant value corresponding to the matrix order and the range of values is shown in Table 2.

Table 2: RI values of the order judgment matrix

1	2	3	4	5
0.00	0.00	0.57	0.94	1.10
6	7	8	9	
1.21	1.38	1.44	1.49	

Table 2 displays the outcomes of the consistency test conducted on the evaluation matrix for the accounting majors' training at a university. Additionally, Figure 2 illustrates the comprehensive weight calculation for each index.

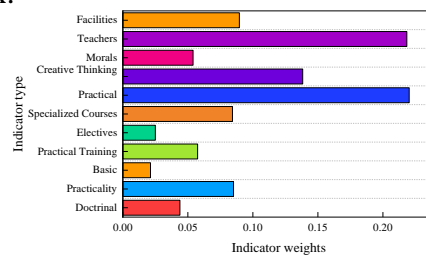


Figure 2: Synthetic weights of each indicator

### 4.2.2 Evaluation results and analysis

To assess a university's accounting talent cultivation, leaders, teachers, students, and enterprises participate in evaluations. Using a 10-point scale, Figure 3 presents scores for the accounting major at S private higher vocational colleges. The overall average is 77.5 points, indicating a moderate level. Notably, teacher, student, and enterprise scores are 75, 72, and 76, respectively, highlighting a need for improvements in professional settings.

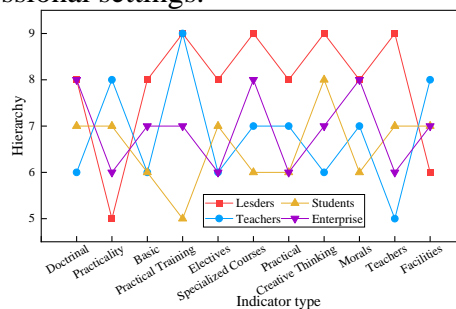


Figure 3: Accounting professional talent training model score

Therefore, colleges and universities must establish an accounting personnel training model based on the integration of industry and education as soon as possible to improve the training of the accounting profession.

## 5. Conclusion

In the current era of rapid information technology advancement and the integration of new liberal arts concepts, the field of accounting is evolving towards digitalization and intelligence. The objective of nurturing accounting talents in higher education is shifting towards developing multifaceted individuals with innovative thinking in the convergence of intelligent technology and finance. However, the existing talent training model requires further enhancement. This paper advocates abandoning outdated teaching concepts, aligning with new liberal arts objectives, and refining talent cultivation strategies. Universities must revamp the curriculum, emphasize interdisciplinary teaching, incorporate diverse faculty, and enhance teaching programs. Collaboration with enterprises should intensify, focusing on practical teaching to enhance students' hands-on and processing skills. This approach is envisioned to foster a new generation of high-quality accounting talents capable of meeting the evolving demands of the times, providing intellectual support for sustained enterprise development and national economic progress.

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