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The Digital Intelligent Accounting Talent Training Model and Government-Industry-Academia Collaborative Education: A Perspective from Triple Helix Theory

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Abstract: The continuous progress of artificial intelligence technology in China has impacted the original pattern of many traditional industries, and the long-established accounting industry is also facing the dilemma of being replaced. In this paper, from the perspective of triple helix theory, on the basis of elaborating the meaning of digital intelligence and the inner mechanism of action, and with the cultivation of composite digital intelligence accounting talents with data analysis and processing ability, original innovation ability and efficient collaboration ability as the cultivation goal, we focus on the tripartite collaborative education model of government-industry-university, and find that the cultivation of new digital intelligence accounting talents in the era of big data can make use of the tripartite government-industry-university. It is found that the cultivation of new digital intelligent accounting talents in the era of big data can make use of the collaborative education platform jointly constructed by government, industry and university, and the interaction of the three main forces in the platform can accomplish the cultivation goal of accounting talents more efficiently and improve the cultivation ability. This paper hopes to provide useful reference for solving the real dilemma.

1. Introduction

From a realistic point of view, the development of China's accounting industry can be roughly divided into four stages. The first stage is the traditional accounting stage, the accounting practitioners still use physical carriers such as books for accounting records. 1980s computer applications in the field of accounting also developed rapidly, thus began the second accounting computerized stage, the initial accounting computerized stage is mainly the use of computers for a large amount of data repetitive high simple accounting work, with the application of computer technology [1].As the application of computer technology continues to mature, China has also entered the third stage that is the management of computerized stage, some financial enterprises to develop software has been able to provide information users with simple management decision-making advice, in this stage of accounting personnel need to have basic data analysis capabilities and financial software interaction capabilities. The fourth stage is the stage of digital

intelligence. Nowadays, under the influence of explosive breakthroughs in technologies such as big data, cloud computing, mobile Internet and Internet of Things, data has become a new element in the production process, and the accounting industry needs not only personnel engaged in basic accounting work, but also high-level accounting talents with data analysis and processing ability, innovation ability and collaboration ability. As the cradle of social elites, the school should take the mission of cultivating to meet the needs of economic and social development [2], and how to follow the trend of the times to use the government-industry-academia cooperative education mechanism to improve the practical application ability of accounting talents has become an important issue of practical significance.

2. Analysis of the Current State of Research

2.1. The Proposed Triple Helix Theory

The triple helix theory was first proposed by two American geneticists, Robert B Corey and Linus Pauling, when they studied the structure of DNA. In 1955, the American sociologist Henry Etzkowit and the Dutch sociologist Loet Leydesdorff applied the discovery to the study of humanities and social sciences, proposing a complex triple helix relationship among government, industry and university and explaining the dynamic operation mechanism among the three subjects [3]. The triple helix theory believes that although the three subjects of government, industry and university have different goals and tasks from independent perspectives, in order to bring into play the maximum utility of the subjects, reasonable model construction and institutional design can be adopted to make the power of the three parties interact, overlap and interact with each other, forming an upward spiral in the dynamic whole process, as the Marxist concept of development elaborates, things will continue to develop in the spiral and form a synergy to keep moving forward, and all the subjects in the triple helix model also form new cooperation and collaborative innovation mechanism in this process to promote the development and progress of economic and social development.

2.2. The Connotation of Digital Intelligence

The initial definition of digital intelligence is the explanation of "digital intelligence", which is commonly referred to as the practical application of digital technology, with three specific meanings, namely, using "cloud computing" algorithms to process large volumes of data to simplify the workflow, and then integrating human intelligence into the process of data processing. The human being will be liberated from the tedious labor, and finally the wisdom as a bridge to form a deep combination between human and machine. However, with the development of China's industrial intelligence and interconnection, digital intelligence has also transitioned from the stage of product intelligence to the stage of enterprise management intelligence, and then developed into today's linked coupling of data from different sources, and closer human-machine collaboration, moving toward the goal of smart cities and Internet of everything. The Ministry of Chinese Finance in the "accounting information development plan (2021-2025)" also mentioned in the "14th Five-Year Plan" period to take digitalization as a breakthrough, actively promote the digital transformation of accounting, and build a national accounting information development system in line with the requirements of the new era. However, the current implementation of enterprises in the field of digital intelligence is not perfect, and generally has a late start, insufficient forward momentum, weak supervision and other problems, especially the level of integration of data production factors need to be improved. Therefore, in order to grasp the opportunity of this change and occupy the high ground of industry development, the transformation of enterprises into digital intelligence is urgent, and universities also need to take up the burden of cultivating the reserve talents of digital intelligence

accounting.

2.3. The Current Situation of Talent Training Mode of Accounting Professionals

In the context of industrial intelligence, there are still some problems in the talent training mode of accounting majors, and some scholars found that talent training suffers from students' lack of professional interest, low adaptability of teachers and students to new technologies, and outdated training mode [4]. The teaching work in colleges and universities is biased toward traditional accounting theoretical knowledge and lacks the popularization of emerging computer technologies such as artificial intelligence machine learning, and some colleges and universities even copy directly from the training model of key institutions, and the students cultivated in this environment naturally lack the innovation and adaptability that accounting talents in the intelligent era should have. On the other hand, others believe that schools neglect the guiding role of synergy awareness in the cultivation process and do not develop deep cooperation between schools and enterprises [5]. Currently, all parties in the school-enterprise cooperation process focus on short-term benefits and ignore the common long-term development strategic goals. Schools urge students to go to partner enterprises for practical training after teaching basic theoretical knowledge, expecting students to apply what they have learned, but school knowledge is often not timely compared to practical knowledge of enterprises, and students still need to start over. Secondly, in order to save their own costs, enterprises only receive training objects with the mentality of completing tasks, and are not willing to invest corresponding resources for talent training, which leads to no substantial cooperation between schools and enterprises, and thus accounting talent training becomes empty talk.

2.4. The Significance of Collaborative Education between Government, Industry and Academia in the Triple Helix Perspective

In order to meet the needs of the market environment and follow the trend of the new era of change, it is important to build the government-industry-university cooperative education model from the perspective of the triple helix theory. Firstly, unlike the traditional government-industry-university cooperation model, the cooperation based on the triple helix theory aims to break the ideological barriers between the joint subjects to form a consensus, continuously improve the value of resources through the horizontal circulation of production factors and resources such as talents, knowledge, materials, and technology, and form a strong stable state in the vertical circulation of the time dimension to promote the differentiation and evolution of the triple helix system, and then form the overall strategic level of The long-term dynamic mechanism of collaborative education [6]. Secondly, the key to the cultivation of digital intelligent accounting talents is to improve the innovation ability and collaboration consciousness, and some authors argue that the core contribution of the triple helix theory is the cross-interaction between government, industry, and academia, which in turn realizes the evolution and upgrading of the innovation system [7]. The cultivated students can also improve their own literacy based on the dynamically changing innovation system and efficiently enhance the sense of collaborative communication. Again, the collaborative education platform can meet the needs of different interest subjects [8], and through the organic combination of triple helix theory, the government can change from the traditional top-down functional structure to a top-down combined model, grasp the digital intelligence development needs of the accounting industry, and become an innovative government. From the perspective of enterprises, the tripartite collaborative education platform can provide strong support in terms of policy planning and talent delivery, and the industry itself can use it to expand its market share and improve its competitive advantage, and the new theories and technologies in the university can then be rapidly put into production, thus promoting the sustainable development of the regional economy. From the perspective of universities, schools can

have more opportunities to participate in social practice, which is conducive to summarizing theories and obtaining academic results from practice, and can deepen the connection with industries, so as to change from an "ivory tower" university to an innovative and entrepreneurial university.

3. The Construction of Intelligent Accounting Talent Cultivation Model under the Perspective of Triple Helix Theory of Government-industry-academia Collaborative Education

In the process of cultivating digital intelligent accounting talents based on the triple helix theory, the three subjects of government-university-industry should closely focus on the central point of talent cultivation, give full play to the subjects' own advantageous power, and collaborate and innovate efficiently with purpose and consciousness to form a triple helix relationship with the crossover of three powers [9]. As shown in Figure 1, the government plays the macroscopic deployment and resource integration function, and starts from top-level design and institutional arrangement to plan and guide the construction of collaborative education platform. Universities play the advantages of knowledge, talents, relationship resources, and think tank construction. Industry, on the other hand, focuses on providing application platforms, cutting-edge technologies, and enhancing the core competitive advantages of talents. The three training subjects collaborate, communicate and support each other, and in the process of spiral circular flow of resource elements, they promote the deepening cooperation between government, industry and university, and move forward toward the goal of cultivating digital intelligent accounting talents, contributing to the promotion of long-term development of economy and society.

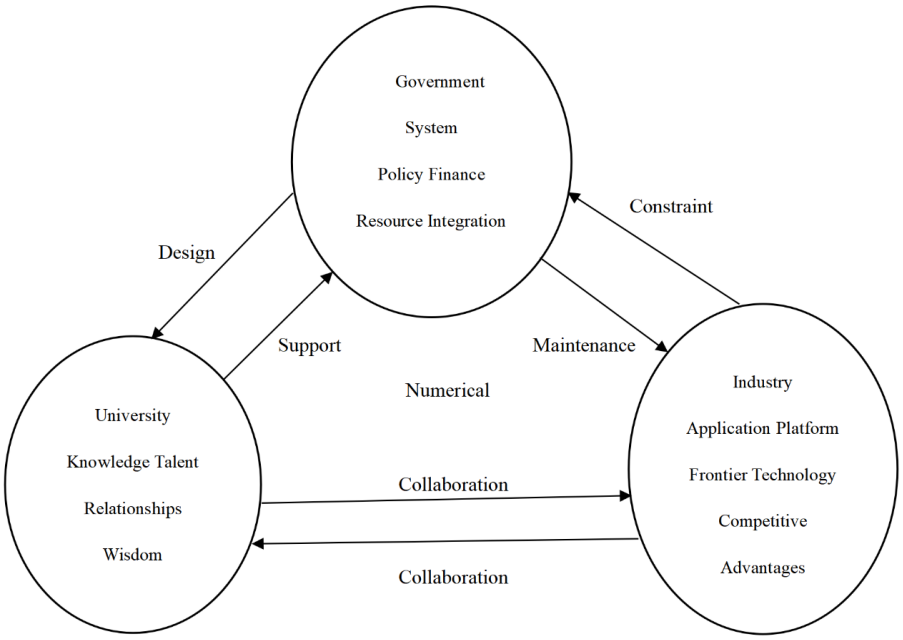

Figure 1: Talent development model based on triple helix theory

3.1. Strengthen the Government's Guidance and Planning Mechanism

With the implementation and promotion of the strategy of developing the country through science and education, a large number of high-level composite accounting talents who can adapt to the development needs and rapid technological changes are urgently needed from the national level. Focusing on the dilemma of the existing accounting talents training model, the government's institutional arrangement for universities and the constraint mechanism for industry are not yet

perfect, especially the weak points in the educational evaluation and supervision links for universities, Chinese government also emphasized the promotion of science and technology system reform at the 20th academician conference of the Chinese Academy of Sciences to form a basic system to support comprehensive innovation, therefore, to create a stable and forward original innovation platform. It is not only the task of both the university and the industry, but also the government has to take the corresponding responsibility and obligation [10]. As a superstructure, the government can support the orderly progress of university-industry cooperation by formulating relevant policies. Especially for the situation that both schools and enterprises are not highly motivated to cooperate, the government should reasonably adjust and optimize the institutional arrangement, establish a complete set of evaluation and supervision incentive mechanism, set up special funds for the training of digital intelligent accounting talents, provide financial guarantee, fully mobilize the enthusiasm of the personnel involved in the collaborative education platform, and guide all participants towards a common goal. At the same time, at this stage, due to the rapid change of technology in the context of digital intelligence, there may be a large error in the time node of information reception among the three parties of government-industry-academia, so the government should give full play to the advantage of location to deploy the strength of all walks of life, coordinate the whole process of platform construction and development, integrate all kinds of resources to do a good job of basic protection for the composite talent The "seeds" provide fertile ground for growth and development.

3.2. Multi-dimensional Communication and Collaboration between Universities and Industries

In the perspective of triple helix theory, university is the main position of talent cultivation and the main body of knowledge, wealth and wisdom cohesion, and it is also the link to all walks of life and has rich relationship resources. Therefore, in building a collaborative education platform, universities should combine their advantageous disciplines, give full play to their characteristic advantages, and take the initiative to promote deep collaboration between universities and enterprises. In the face of the demand of digital intelligence accounting talents, enterprises have more opportunities to contact with cutting-edge technological changes and natural platform for practice compared with universities, and enterprises can absorb talents in the process of talent training to provide employment opportunities to strengthen their own strengths and enhance their competitive advantages in the market, while also improving the individual competitive advantages of accounting talents. Therefore, University-Industry Cooperation can be carried out in multiple dimensions. First, school-enterprise cooperation can be modeled after the OMO model of e-commerce to carry out the whole process of immersion and in-depth cooperation. Instead of simply going from the school to the enterprise for internship, the cultivated objects can learn from the entrance stage by combining online and offline, school and industry, theory and practice, and "theory-practice-theory" from the time dimension. The circular learning of "theory-practice-theory" is carried out from the time dimension, and the original innovation ability and efficient collaboration ability of talents are exercised in the whole time and space. Secondly, in order to meet the needs of digital intelligent accounting talents, universities popularize traditional theoretical courses while cooperating with enterprises to offer courses related to artificial intelligence, data analysis, computer language, etc., to transfer knowledge information to talents in the form of subject tasks or innovation and entrepreneurship and through the process of cooperation, so as to improve the data analysis and processing ability of talents. Third, from the strategic level analysis of the school-enterprise parties under the guidance of the government can form a strategic alliance with the goal of collaborative education, especially the cooperation between local industries and local institutions makes the continuous flow of talents between industry and schools, which can form an industrial cluster effect to achieve the purpose of resource sharing, risk sharing, low cost and high yield, and realize the ultimate needs of economic and social development.

3.3. Enrich the Type of Objects Cultivated in the Model

Under the traditional government-industry-university cooperation platform, only students are trained, but the government-industry-university collaborative education platform based on the triple helix theory, the types of training objects can be more abundant. Because of the strong dynamic environment of intelligence and digitalization, the industry expects to reinvent digital intelligence, and needs not only young and energetic grassroots accounting talents, but also decision-making digital intelligence accounting leaders with rich management experience. Students in the triple helix model certainly have a great opportunity to become such talents, but the time required will increase the cost of the school and industry to form a collaborative education platform development resistance. In contrast, teachers in colleges and universities and reserve cadres in enterprises already have a rich foundation in theoretical knowledge and management experience, so they can be integrated into the government-industry-academia collaborative education platform as training objects. Firstly, the teachers of colleges and universities have strong ability to receive new knowledge, and they can teach in the process of teaching and training, learn by learning, and learn while teaching, which can play a good role of demonstration and leadership to students. Secondly, the identity and duties of university teachers and enterprise cadres can be transformed into each other in the platform, and they can experience the characteristics of each subject together with students, fully draw nutritional elements and make rational use of platform resources, so as to promote the continuous innovation of the triple helix collaborative education platform and form a virtuous circle to meet the ultimate goal of social development and progress.

4. Conclusion

To sum up, the training of digital intelligent accounting talents under the perspective of triple helix theory needs to make use of the collaborative education platform jointly constructed by the government, industry and academia, and only if the three subjects collaborate, cooperate and support each other, the training of accounting talents can get rid of the dilemma under the obsolete model, develop towards the clear goal in a long-term and sustainable manner, and adapt to the changing needs of the times, so as to realize the flourishing development of the accounting industry in a real sense and Prosperity and prosperity.

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