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Analysis on the Cultivation of Digital and Intelligent Professionals in University Economics

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Abstract: With the rapid development of the digital economy, technologies such as big data, blockchain, and artificial intelligence are reshaping the economic development model, and data has become a means of production for economic and social development. The application of digital and intelligent technologies in the field of economics can efficiently process complex statistical data and bring profound changes. At this stage, digitalization and intelligence have also become the core force driving changes in various fields, directly affecting the higher education system. The wave of digitalization and intelligence brings not only technological innovation but also changes in thinking patterns and industrial structures. Therefore, colleges and universities should thoroughly explore the teaching model of economics majors to cultivate talents that meet the needs of the industry and further promote economic development. Based on this, this paper analyzes and studies the cultivation of digital and intelligent professionals in economics in colleges and universities for reference.

Keywords: Colleges and universities; Economics; Digitalization and intelligence; Talent cultivation

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1. Introduction

The rapid development of the digital economy directly affects the overall operation of the economy and puts forward higher requirements for the cultivation of economics professionals. However, at this stage, there are still problems, such as the disconnection between theory and practice in the cultivation of economics talents in colleges and universities, making it difficult to meet the needs of industries for talent cultivation. Therefore, it is necessary to strengthen the reform of digital and intelligent talent cultivation in college economics. This is not only the requirement for higher education to adapt to economic and social development, but also an important channel to promote the development of the economics discipline.

2. Overview of digital intelligence

Digital intelligence, as a development model integrating digitalization and intellectualization, represents an

advanced state of information technology. Digitalization makes full use of computer technology to convert various types of information into digital form, enabling the collection, storage, transmission, and processing of data. In the economic field, enterprises generate a large amount of data information during their operations, including consumers' behavioral information and market dynamic data. All these data can be recorded, thereby forming an integrated data resource. Such data not only covers traditional economic statistical indicators but also includes unstructured data, which provides more diversified materials for economic analysis. Intellectualization, on the other hand, emerges based on the data accumulated through digitalization. It effectively utilizes technologies such as artificial intelligence and machine learning to achieve self-learning, analysis, and judgment. In economic research, machine learning algorithms can conduct in-depth analysis of massive data resources and automatically identify the relational structures within the data. Deep learning models can be used to effectively predict macroeconomic development patterns, thereby providing assistance for the formulation of economic policies. In the financial sector, intelligent systems can analyze market data and investors' personalized characteristics to provide them with precise investment advice, which helps improve work efficiency [1].

3. Significance of cultivating digital and intelligent professionals in university economics programs

3.1. Meeting the talent development needs of the new era

The "Recommendations of the Central Committee of the Communist Party of China on Formulating the 14th Five-Year Plan for National Economic and Social Development and the Long-Range Goals for 2035" proposes the optimization and upgrading of the economic system and the acceleration of digital construction. Currently, the development of the digital economy is entering an era driven by data. In the context of the new era, talents with only traditional professional knowledge systems can no longer meet the requirements of the industry. At this stage, economics professionals need not only basic knowledge in the field of economics but also basic digital and intelligent operation skills. For example, economics professionals need to build a systematic knowledge system integrating "economics + digital intelligence", master basic theories such as microeconomics and macroeconomics, and also grasp programming languages like Python and R for data processing and modeling, as well as skillfully use big data analysis platforms such as Hadoop and Spark for data mining. Only by mastering this series of digital and intelligent operational skills can they ensure their application in work and provide assistance and support for future employment [2].

3.2. Responding to complex economic phenomena of the era

Economics professionals should not only possess basic knowledge and skills but also develop good thinking qualities to address key issues. Firstly, developing data thinking. Students need to extract key information from massive amounts of data, interpret it, and analyze problems based on such information. When participating in market research activities, students can abandon traditional sampling survey methods and instead use big data technology to obtain more accurate and comprehensive market information, conduct in-depth analysis of consumers' behavioral data, and fully understand the current changes in market demand. Secondly, developing algorithmic thinking. This involves using algorithms to solve more complex economic problems and understanding the role of algorithms in resource allocation and price formation. In addition, interdisciplinary integration thinking is particularly important. Economics should integrate with computer science, mathematics, and other disciplines, which requires students to develop interdisciplinary knowledge and abilities to address economic issues arising in

the digital and intelligent era [3].

3.3. Adapting to changes in the job market

On one hand, traditional economics-related positions are increasingly demanding digital and intelligent skills from practitioners. Analysts in the financial industry can no longer rely solely on basic financial analysis; they must also make full use of data analysis tools for calculations and quantify specific risk indicators. On the other hand, digitalization and intelligence have spawned many emerging professions, including digital strategy analysts. These new professions provide more employment opportunities for economics students, but they also intensify employment competition [4].

4. Specific manifestations of higher education promoting digital and intelligent development

4.1. Strengthening knowledge innovation, research, and development work

Colleges and universities possess relatively complete academic resources. Many educators are also top-notch scientific research talents, and their research and technical facilities are relatively sophisticated. Therefore, colleges and universities are also important positions for knowledge innovation and technological development. Research teams in colleges and universities conduct in-depth research in the field of digitalization and intelligence, committed to optimizing artificial intelligence algorithms, ensuring the protection of big data, and solving some technically difficult problems. For example, in economic research, new economic research models are explored by integrating digital technologies with economic theories. Studies are conducted on how to utilize the decentralized characteristics of blockchain and apply artificial intelligence technologies to optimize relevant economic policies, thereby providing assistance and support for economic development [5].

4.2. Realizing industrial upgrading and transformation

Colleges and universities establish cooperative relationships with enterprises and effectively utilize the collaborative development model of industry, education, research, and application. Through industry-university-research cooperation projects, they transform digital research achievements into practical productivity, thereby facilitating the digital and intelligent upgrading of traditional industries. For instance, colleges and universities cooperate with manufacturing enterprises, using big data analysis technology to optimize production plans, further improving product quality, and ensuring the reduction of production costs [6]. Colleges and universities also need to strengthen cooperation with service-oriented enterprises, develop intelligent service platforms, thereby ensuring service quality and delivering an excellent customer experience. Moreover, colleges and universities should provide digital training and consulting services for industries to help enterprise employees improve their own literacy, develop key digital and intelligent skills, and better adapt to industrial changes.

5. Strategies for cultivating digital and intelligent professionals in economics in colleges and universities

5.1. Strengthening the construction of curriculum system to ensure the cutting-edge nature of knowledge

Colleges and universities should attach importance to the macro construction of curriculum system, introduce

digital-related courses such as Big Data Economics and Data Science and Technology. These courses can teach students the basic principles of the application of intelligent technologies in the field of economics. In addition, interdisciplinary educational resources should be introduced to further break the limitations of disciplinary teaching, so that students can broaden their knowledge horizons in practical learning and learn to use knowledge from multiple disciplines to solve practical problems. At the same time, curriculum teaching should conform to the requirements of the times, continuously update and improve educational content, and introduce cutting-edge achievements and cases, so that students can truly contact real cases for learning and thinking, and improve their professional quality and ability [7–9]. For example, in Econometrics, some core courses on basic economic metrics should be integrated into the knowledge framework system of digital economy applications.

Colleges and universities in different regions should adapt to the development trend of the economy and society, constantly optimize and update courses, and build characteristic curricula to meet the development needs of the industry.

5.2. Innovating course teaching methods to enhance students' motivation

Against the backdrop of the digital and intelligent era, teachers should focus on innovating course teaching approaches and adopt diverse methods for teaching.

First, teachers can design project-based teaching activities, enabling students to truly learn to actively apply knowledge in the process of completing projects and develop good practical exploration abilities. For example, teachers can set up enterprise projects, allowing students to apply relevant knowledge in project practice, thereby enhancing their practical capabilities. In this process, students can utilize knowledge in the fields of economics, statistics, and computer science to properly process and organize market data [10]. Second, teachers can create an online-offline hybrid teaching model. By leveraging the advantages of online teaching platforms, they can provide rich educational resources to promote students' learning and development. Then, teachers can conduct in-class discussions, practical operations, and guidance offline, which is also conducive to cooperative learning between students and teachers.

Virtual simulation teaching can make full use of virtual reality technology and augmented reality technology to create a more realistic learning environment for students, enabling them to complete practices in the corresponding environment and improve their problem-solving abilities. For instance, in market research projects, students use web crawler technology to collect market data, employ Python for data cleaning and analysis, and utilize Tableau for visual display, ultimately forming a market analysis report, which helps cultivate students' practical abilities and team spirit.

5.3. Strengthen practical teaching links and enhance the importance attached to education

For students majoring in economics, they need to have not only solid theoretical knowledge but also strong practical application abilities. To this end, colleges and universities should pay attention to early investment, build a digital and intelligent practical teaching platform, introduce advanced educational resources and equipment, and provide students with a good platform for practical learning. This includes big data laboratories, fintech laboratories, etc., with the introduction of cutting-edge equipment resources to create a favorable practical environment. For example, colleges and universities cooperate with financial institutions to organize financial data analysis projects, where students participate in projects such as stock market trend prediction. They also carry out cooperation with internet enterprises to conduct in-depth mining of market data information and analyze user

behavior data, thereby providing support for the development of enterprises [11–13].

5.4. Focus on the construction of teaching staff and enhance teaching innovation capability

Colleges and universities should adopt various methods to improve teachers' teaching ability, enhance their digital and intelligent literacy, and boost teaching innovation capability. They can organize teachers to participate in digital and intelligent technology training courses, seminars, and other activities, so that teachers can fully understand the current development of digitalization and intellectualization, as well as its application status in the economic field, and then integrate practical experience into teaching work. Moreover, schools need to strengthen the training of interdisciplinary talents, recruit professionals in the fields of computer science, mathematics, and statistics, constantly enrich the professional teaching staff, and provide new method guidance for teaching work. In addition, schools need to establish and improve the incentive system for teachers, optimize the professional title evaluation and performance assessment, and incorporate teachers' digital and intelligent literacy and digital and intelligent achievements into the assessment and evaluation, which will also help promote teachers to actively engage in the research of digitalization and intellectualization. Schools should also recruit senior professors from relevant fields outside the school and digital technical personnel with rich practical experience as part-time teachers, so as to strengthen academic exchanges and guidance, improve the quality of education as much as possible, and achieve good teaching benefits [14].

5.5. Develop curriculum textbooks and lesson plans to enhance learning autonomy

In the context of the digital era, colleges and universities should strengthen cooperation with economic industries, build digital economy platforms, and actively collect data and information from students' feedback, so that enterprises, schools, and scientific research institutions can participate in the construction of the digital economy discipline system. The core courses of the major should be carried out in accordance with the logic of big data + intelligence + economy, and ensure the effective integration of soft courses and hard courses. Relevant technologies in the field of big data analysis can be integrated into lesson plans to ensure the cutting-edge nature of theories. Furthermore, teachers should develop virtual teaching courseware, build online quality courses, and upload these resources to the learning platform, so that students can participate in independent learning and practice activities and solve problems encountered in the learning process [15].

6. Conclusion

To sum up, against the backdrop of the digital and intelligent era, the cultivation of economic professionals in colleges and universities is facing unprecedented opportunities and challenges. It is a systematic and dynamic project. This requires educators to conduct in-depth analysis and research on the in-depth connotations of digitalization and intelligentization, grasp the current situation of talent cultivation, and thus carry out the cultivation of digital and intelligent talents. With the curriculum system as the core of education, teaching methods as the engine of innovation, practice as the way to improve capabilities, and the teaching staff as the guarantee of quality, a more complete educational mechanism can be built. In future research, colleges and universities should continue to pay attention to the development of digital technologies, so as to continuously reform the current talent cultivation mechanism and better adapt to the development characteristics of the times.

Disclosure statement

The author declares no conflict of interest.

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