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# Reflections and Explorations on the Construction of Undergraduate Major in Digital Economy

**Dunping Huang**

School of Economics, Anhui University of Finance and Economics, Bengbu, Anhui, China
h330634312@qq.com

**Abstract:** In recent years, as digital economy has become a new driving force for economic growth, the demand for digital economy talents from all walks of In order to alleviate the increasing shortage of professionals in the field of digital economy and improve the quality of In order to alleviate the increasing shortage of professionals in the field of digital economy and improve the quality of talent cultivation, on the basis of summarizing and refining the construction experience of undergraduate majors in digital economy in Anhui University of Finance and Economics, this paper discusses the cultivation path of composite talents of undergraduate majors in digital economy from This paper discusses the cultivation path of composite talents of undergraduate majors in digital economy from five aspects: clear cultivation objectives and career planning, interdisciplinary curriculum system, multi-chain collaborative training base. This paper discusses the cultivation path of composite talents of undergraduate majors in digital economy from five aspects: clear cultivation objectives and career planning, interdisciplinary curriculum system, multi-chain collaborative training base, high-quality innovative teaching materials and diversified faculty team.

**Keywords:** Digital Economy; Professional Construction; Talent Cultivation Path; Two-way Flow Cultivation Mechanism.

## 1. Seizing the Opportunity of Digital Economy Development and Striving for First-class Undergraduate Majors in the Construction of New Liberal Arts

In recent years, the development of China's digital economy has been on the rise, and the scale of the industry continues to expand. The latest "2022 China Digital Economy Theme Report" shows that China's digital economy has reached 45.5 trillion yuan, a nominal growth of 16.2% year-on-year, ranking second in the world. The speed of development of the digital economy, the scale and effectiveness of the remarkable, as if China's economic development has become a new driving force [1]. The report of the 20th Party Congress proposes to accelerate the development of the digital economy, promote the deep integration of the digital economy and the real economy, and create an internationally competitive digital industry cluster. At present, China's government agencies at all levels, enterprises and institutions, organizations and associations for the digital economy field composite professional talent demand is continuing to grow. As the core element of innovation drive and the first resource of digital transformation [2], talents play an increasingly important role in the development and growth of China's digital economy. According to the "Digital Economy Employment Impact Study Report" released by the China Academy of Information and Communication Research, the current digital talent gap in China is close to 11 million, and with the rapid advancement of digitalization in the whole industry, the digital talent demand gap will continue to increase, and the cultivation of high-level applied, composite and innovative digital talents has become an urgent task. Declaration on the Construction of New Liberal Arts, emphasizing that "actively promote the in-depth integration of modern information technology such as artificial intelligence and big data with liberal arts majors, actively develop emerging majors in liberal arts, promote the transformation and upgrading of traditional liberal arts majors, and realize the deep cross-fertilization of liberal arts and science, agriculture and medicine." In April 2021, General Secretary Xi Jinping stressed during his visit to Tsinghua University that it is necessary to use the "catalyst" of cross-fertilization of disciplines, strengthen the cultivation capacity of basic disciplines, break the barriers of disciplines and majors, adjust and upgrade the existing system of disciplines and majors, aim at the frontier of science and technology and key fields, promote new engineering, new medicine, new agriculture and new liberal arts To accelerate the cultivation of talents in shortage. Looking into the future, digital economy is a matter of national development. As a new liberal arts major with interdisciplinary and intermingled knowledge, the professional construction of digital economy and the training of compound talents are imperative and urgent. As the cradle and important ground for talent cultivation, universities play a crucial role in promoting the development of digital economy and the cultivation of complex talents [3-4]. Therefore, it is of great practical significance to explore and develop a clear, comprehensive and systematic path for cultivating complex digital economy professionals to improve the digital economy quality literacy and skills of all people and society as a whole, and to consolidate the social foundation and talent base for the development of China's digital economy.

Looking at the construction and development of undergraduate majors in digital economy, the number of approved construction universities has increased year by year since the Ministry of Education added undergraduate majors in digital economy in 2018. Up to now, a total of 70 universities nationwide have been approved to establish undergraduate majors in digital economy, of which the professional code is 020109T, the degree granting discipline

is economics, and the duration of study is 4 years. From the viewpoint of degree granting categories, the major of digital economy is a branch of economics, but it focuses on cultivating professionals with cross-fertilization knowledge background of mathematics, economics and information technology, broad vision and innovative spirit, and is a new major established to meet the development strategy of national digital economy. However, due to the late approval of this major, there is little research literature on the construction of digital economy undergraduate majors and the cultivation of complex talents in China, the talent training system is not perfect, the realization path is not clear, and there is no standard to evaluate the effect of talent training. At the same time, teachers in some universities still insist on traditional education methods and modes, have little awareness of data, do not implement new technologies and concepts, do not pay much attention to and use data processing, and lack curriculum innovation and awareness of keeping up with the times, which are not conducive to the cultivation of complex talents [5]. Therefore, how to reform and innovate the training mode and realization path of compound talents, promote the digital economy undergraduate major of local colleges and universities to strive for the first-class undergraduate major in the new liberal arts construction boom, and cultivate compound digital talents with the characteristics of the times and professional characteristics has become the ' question of the times ' that experts, scholars and educators in the field of digital economy must answer.

# 2. Exploring the Path of Building Digital Economy Majors and Training Composite Digital Talents in Local Colleges and Universities

The construction of new liberal arts focuses on the exploration and practice of new majors or new directions, new models, new courses and new theories [6]. Anhui University of Finance and Economics, as the second batch of institutions in China and the first batch of institutions in Anhui Province to offer digital economy majors, has continued to show the characteristics of digital economy majors and become increasingly effective since it was approved for construction in 2019 by continuously exploring the training mode of composite digital talents, focusing on professional talent training objectives and career planning, curriculum system setting, practical training base building, innovative teaching materials construction and teacher team building, etc. The digital economy specialization has become increasingly distinctive and effective.

## 2.1. Long-term development of clear training goals and career planning

The professional construction and talent cultivation of colleges and universities must be subordinated to and serve the needs of scientific and technological progress and economic and social development [7]. Local colleges and universities should start from the actual talent demand generated by the development of digital economy, and make long-term planning and formulate clear goals of raising talents and students' employment direction for undergraduate majors in digital economy. The major of digital economy has emerged in the process of China's continuous strengthening and improvement of digital economy, and the biggest feature of its major is the cross-fertilization between disciplines, which not only cultivates students' ability of big data processing and analysis, but also cultivates students' economic thinking and innovative and entrepreneurial consciousness. Therefore, Anhui University of Finance and Economics, in formulating the talent cultivation objectives of the class of 2022 digital economy undergraduate program, emphasizes the fundamental task of establishing morality, cultivating students with firm ideals and beliefs, comprehensive development of morality, intellect, physique, aesthetics and labor, adapting to the needs of national economic and social development, mastering the basic theoretical knowledge of economics, big data science, computer science, artificial intelligence and blockchain technology, proficiently applying and mastering modern They are highly qualified professionals who can be competent in management, scientific research, economic analysis and prediction in government, industry and commerce.

For undergraduates majoring in digital economy, the earlier and more long-term career planning is, the higher the quality of employment [8]. Under the guidance of clear training objectives, students can further understand and grasp the employment prospects and further education after graduation through career planning and other courses, so that they can selectively focus on learning relevant professional knowledge and skills to improve their competitiveness [9]. After an in-depth understanding and analysis of the demand for digital economy professionals from the market and the government, the following career fields are summarized for the subsequent career choices and future planning of digital economy graduates:

Direction 1: Basic R&D and education and teaching research positions. These talents are mainly engaged in scientific research as well as education and teaching in the field of digital economy. Specifically, undergraduates can continue to study and research in schools or enterprises with master's degree programs in digital economy or doctoral programs in network economics and other disciplines related to digital economy to promote new technology development and underlying disciplinary theory innovation; stay in school to supplement and expand the teaching staff in the field of digital economy; work in digital economy research institutes of various enterprises and institutions, digital economy technology companies, etc. to engage in digital The students are also engaged in digital economy situation analysis, technical and economic research, etc.

Direction 2: Digital business scene application positions. After graduation, such talents are mainly engaged in the application and promotion of business scenarios of digital technology in emerging fields such as Internet, artificial intelligence and e-commerce, helping enterprises to improve quality and efficiency and digital transformation and upgrade, and promoting the deep integration of digital economy and real economy. Specifically, undergraduates can engage in administration, marketing, business promotion and digital application in emerging Internet companies, international trade companies, banks and finance companies; they can choose to start their own business and put their digital economy thinking into the broad rural revitalization, innovate business models, thus creating new commercial and social values and helping the development of rural special industries.

Direction 3: Digital governance positions. At present, the digital and intelligent operation of various government departments, the ethical risk governance brought by emerging

technologies such as artificial intelligence and the supervision of head platform companies require more and more digital governance professionals to participate in them. Specifically, undergraduate graduates can work in governments and institutions at all levels, as well as various industry associations and organizations, specializing in digital governance, administration and management.

## 2.2. Innovative setting of interdisciplinary curriculum system

Curriculum system is the core content of talent cultivation program of higher education institutions, and also an important vehicle and means to achieve the cultivation objectives [10-11]. As an emerging discipline with late approval and construction, the undergraduate program of digital economy should focus on exploring and building a curriculum system with Chinese characteristics, cross-fertilization and keeping up with the times, so that the cultivation of digital economy talents is not limited to the teaching of economics theory or information technology, but consciously keep the basic theory courses of digital economy and offer technical courses related to digital economy situation and data processing. Instead, it consciously keeps the basic theory courses of digital economy and offers technical courses related to digital economy situation analysis and data processing, and organically integrates the two through teaching methods such as course cascade and practical training. Take the curriculum of Anhui University of Finance and Economics 2022 undergraduate major of digital economy as an example, it focuses on the learning of "four modules", namely general studies, discipline specialization, personality development and comprehensive practice. Among them, general education mainly includes ideological and political education courses, public basic mathematics courses, English courses, etc. These courses are mostly unified basic courses for all undergraduate students, mainly to consolidate the basic ability of college students; disciplinary specialties mainly include disciplinary basic courses and professional core courses, among which the disciplinary basic courses mainly include micro and macroeconomics, political economy, international economics, econometrics, etc., in order to provide a better learning environment for digital economy majors. The core courses mainly include Introduction to Digital Economy, Operations Research, Artificial Intelligence, Mathematical Modeling, etc., in order to train students to master and apply information technology and economic theory for data processing, problem analysis and other methods and means; the personality development module includes professional advancement and professional expansion, the main courses are Cloud Computing and Big Data, Blockchain and E-money, Internet, etc, The last is the comprehensive practice module, including innovation and entrepreneurship practice, experimental practice and extra-curricular practice, which aims to stimulate students' innovation and entrepreneurship spirit and improve their scientific research paper writing ability. Through the four modules, students can consolidate their professional knowledge and comprehensive ability in digital economy at the undergraduate level, and lay a solid foundation for higher-level academic research and professional employment.

Not only that, universities should also take the initiative to unite multiple forces to actively declare and build various kinds of digital economy-related Virtual Simulation Experimental Teaching Center Through the integration of integrated and virtualized experimental teaching resources, an interdisciplinary and all-time experimental teaching platform can be formed, so that teachers and students can feel and understand the process of resource allocation, data processing and practical work in advance and enrich their theoretical knowledge and learning experience in online teaching. At present, Anhui University of Finance and Economics has been approved by the Ministry of Education to build 2 collaborative education projects for undergraduate majors in digital economy. Hundreds of undergraduate students in digital economy have been studying in the laboratory for theoretical and practical operation, further mastering the analysis methods of digital economy and exercising the practical ability of digital economy. In the next step, we will continue to join with universities, enterprises and other social organizations to jointly build and declare various laboratories and experimental courses, promote the reform and innovation of curriculum system, and further implement the curriculum concept of "interdisciplinary and coherent".

## 2.3. Jointly create a multi-party collaborative training base

As a new economic model, the digital economy needs practical talents who have digital thinking and ability, but also master understanding how enterprises and industries operate [12-13]. The existing university education often lags behind, and there is a certain degree of mismatch and decoupling with the needs of society and enterprises. As a practical specialty, the cultivation of undergraduate talents in digital economy should take the digitization of industry and digital industrialization as the core, start from the actual demand of market and industrial development, insist on serving the local and national economic and social development, and build a multi-chain collaborative integration education model integrating digital economy industry chain, education chain, talent chain and innovation chain. Specifically, universities should pay attention to the positive interaction between education and teaching and actual industrial development, continue to deepen and innovate the development of integration of industry, teaching and research, promote cross-border joint training, and promote the construction of multi-party digital economy undergraduate talent collaborative education mechanism. By building digital economy internship and education teaching bases, we can build a "university-enterprise talent training bridge" integrating professional internship, practical training and employment for undergraduate talents in digital economy, further improve students' awareness of innovation and entrepreneurship, and achieve the following goals It further enhances students' awareness of innovation and entrepreneurship and realizes the deep integration of professional settings, talent cultivation specifications and industrial development. At present, Anhui University of Finance and Economics is actively promoting the construction of digital economy industrial park together with Bengbu Municipal People's Government, making continuous efforts in collaborative innovation, introduction of high-end talents, transformation of scientific and technological achievements, cooperation between industry, university and research, etc., forming a benign development situation that industry and scientific research complement and promote each other by introducing new industries with high degree of fit into the cluster, and promoting the deep integration development of digital economy and real economy in Bengbu.

In the exploration of talent training mode reform and innovation, we refer to the excellent practice of "dual system" digital talent training in EU, and build a two-way flow training mechanism for compound digital talents, that is, the professional construction and talent training of colleges and universities are oriented by market and social demands, and they are effectively connected and organically integrated with enterprises, industry associations and other diversified market subjects in terms of objectives, plans, contents and methods of curriculum teaching and internship training. In other words, the professional construction and talent cultivation of colleges and universities should be oriented by market and social demands, and effectively connect and organically integrate with enterprises, industry associations and other market pluralists in terms of objectives, plans, contents and methods of curriculum teaching and internship training, promote mutual certification between credits of enterprise practical training and credits of school education, and make enterprise practical training and practice become a part of learning and applying theoretical knowledge of digital economy for college students. At the same time, students with excellent performance during the internship will be given priority consideration and recommendation in the recruitment and employment recommendation of enterprises later, so as to further stimulate students' enthusiasm for practice and internship and improve their practical operation and business ability. In order to further stimulate students' enthusiasm for practice and internship and improve their practical operation and business ability, Anhui University of Finance and Economics has joined hands with Alibaba (China) Education Technology Co. The course aims to enhance students' data analysis thinking, enrich data analysis experience and exercise data analysis ability, so as to lay a good foundation for students to engage in digital economy in the future. After passing the study and assessment, students will receive the "Business Data Analyst (Junior)"certificate certified by Alibaba. In the next step, we will actively promote the mutual certification between high-quality certificates from off-campus enterprises and society and the school's talent training credits, and actively encourage students to obtain various certificates according to their future development plans and employment goals at the undergraduate level to improve their overall competitiveness.

## 2.4. Continuously promote the construction of high-quality teaching materials

The construction of high-quality teaching materials is the basic reliance on the goal of talent cultivation in colleges and universities, and is the basic guarantee for cultivating high-quality and innovative talents [14-15]. Since the construction of digital economy majors started late, there is a long way to go for the innovation and construction of teaching materials. The government, society and institutions of higher education should encourage and subsidize experts and scholars in the field of digital economy and front-line workers in teaching to research, develop and develop the theoretical system of digital economy, and compile and publish teaching materials related to digital economy with new teaching concepts and latest scientific research achievements, so as to fully reflect new developments, new technologies, new theories and new concepts in the construction of disciplines in the field of digital economy, etc. [16]. The "Introduction to Digital Economy" and "Digital Economy Experimental Practical Training Course", which are edited by the professional teachers of the Department of Digital Economy of Anhui University of Finance and Economics, are the practical implementation of the new concept, new development situation and new teaching materials construction plan, which consolidate the teaching foundation for the cultivation of undergraduate talents in digital economy of the university. Meanwhile, higher education institutions, various libraries and other academic institutions should actively build a database of teaching materials in the field of digital economy, and gradually introduce and enter offline teaching materials into the online database, so that students can access relevant books on the Internet in a timely manner. It should be noted that digital economy textbooks should not only refer to domestic excellent textbooks, but also actively study and introduce foreign excellent textbooks and strengthen bilingual education and teaching. We should take the best and discard the worst, promote the internationalization of domestic teaching materials in the field of digital economy, and promote the construction of high-quality teaching materials.

## 2.5. Actively build a diverse faculty

Continuously and actively promote the construction of diversified and high-quality building of faculty, not only help the construction of disciplines and majors, but also guarantee the quality of talent training and academic level improvement [17]. The cultivation of complex talents in digital economy undergraduate majors is inseparable from the creation of excellent teaching and research teams. Build an international digital economy talent training platform, encourage and subsidize students, famous scholars engaged in digital economy research at home and abroad to go abroad or come to China to participate in various exchange programs, and improve the internationalization of digital economy undergraduate majors. We actively introduce all kinds of talents and scientific research teams, etc., and encourage teams of university teachers, especially young teachers, to carry out research and practical investigation on various problems existing in the field of digital economy through institutional arrangements such as scientific research awards. At present, there are 12 teachers in the department of digital economy of Anhui University of Finance and Economics, among which, there is one provincial teaching master and four master's supervisors. The young, professional and diversified teaching team and scientific research team will further improve the ability and level of cultivating talents in digital economy and enhance the quality of talents. In addition, according to the different disciplines and specialties, we prospectively set up research teams and research teams in different research directions, encourage collaborative papers and scientific research, and constantly expand and broaden the connotation of the profession, so as to promote the "blossoming of a hundred flowers" in the field of digital economy research.

Not only that, universities should also actively expand the source channels of excellent teachers, build and improve the two-way flow mechanism of university-enterprise teachers, invite successful business people and entrepreneurs in digital economy professional vertical fields into universities to teach practical experience to professional students, and at the same time encourage our excellent teachers to go to enterprises and other social organizations to exchange and study, so as to enrich front-line teaching experience. Through the two-way interaction and exchange between universities and enterprises

(society), we can make up for the vacancies and shortcomings in the traditional education mode and the existing faculty, and promote the comprehensive quality of teachers in digital economy to improve comprehensively.

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