



# Research and Practice of Innovation and Entrepreneurship Education in Universities from the Perspective of Digital Economy

Jian Dong<sup>1</sup>, Cheng Dong<sup>2</sup>, Jianru Xie<sup>3\*</sup>

<sup>1</sup>Guangdong Food and Drug Vocational College, Guangzhou, 510520, China

<sup>2</sup>TBEA Hengyang Transformer Co., Ltd., Hengyang, 421007, China

<sup>3</sup>Guangdong Polytechnic of Water Resources and Electric Engineering, Guangzhou, 510925, China

\*Corresponding author. Email: xiejr\_gz@163.com

**Abstract.** In the context of the digital economy, innovation and entrepreneurship education for college students has entered a new stage of improving quality and efficiency, and is facing unprecedented challenges and opportunities. From the perspective of digital economy, this paper explores its far-reaching impact on economic and social development, as well as changes in the demand for talents, with special emphasis on the key role of innovation and entrepreneurship ability in the era of digital economy. Through the analysis of specific cases, this paper discusses how to establish a more efficient effect evaluation system of innovation and entrepreneurship education in colleges and universities in the digital economy environment, and discusses the development trend and key work direction of innovation and entrepreneurship education in colleges and universities under the background of digital economy.

**Keywords:** Digital Economy, University Innovation and Entrepreneurship Education, Policy Innovation.

## 1 Introduction

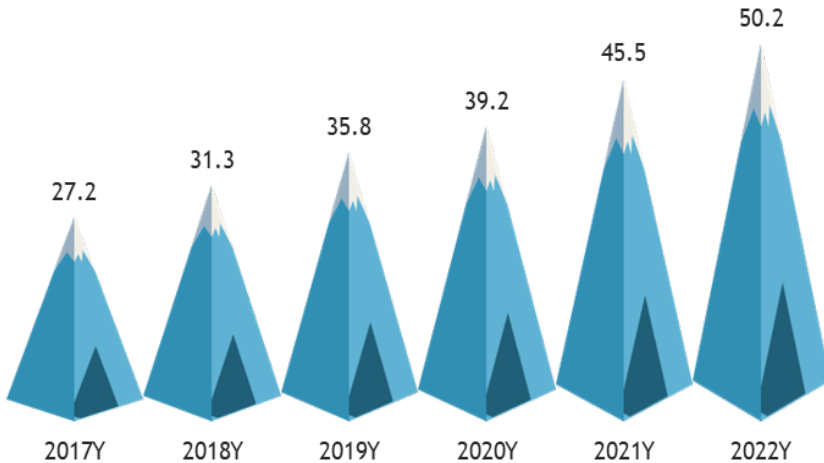
According to the Research Report on the Development of China's Digital Economy (2023) (Figure 1), the scale of the digital economy is still expanding, which shows that the digital economy will play a more important role in the world in the future. The research and practice of innovation and entrepreneurship education in colleges and universities from the perspective of digital economy is an important issue in the current academic and educational practice. Through the integration of domestic and foreign research results, it is found that digital economy has brought unprecedented opportunities for education, providing diversified teaching resources and practice platforms; At the same time, it also puts forward the challenge of how to effectively use these resources to cultivate innovative talents in line with the needs of the future society. Therefore, future research should continue to focus on how to build a more flexible, efficient

© The Author(s) 2024

K. Zhang et al. (eds.), *Proceedings of the 4th International Conference on Internet Finance and Digital Economy (ICIFDE 2024)*, Advances in Economics, Business and Management Research 301,

[https://doi.org/10.2991/978-94-6463-534-8\\_17](https://doi.org/10.2991/978-94-6463-534-8_17)

and adaptable education system to cope with the complexity and uncertainty brought by the digital economy, and lay a solid foundation for cultivating high-quality innovative and entrepreneurial talents<sup>[1]</sup>.

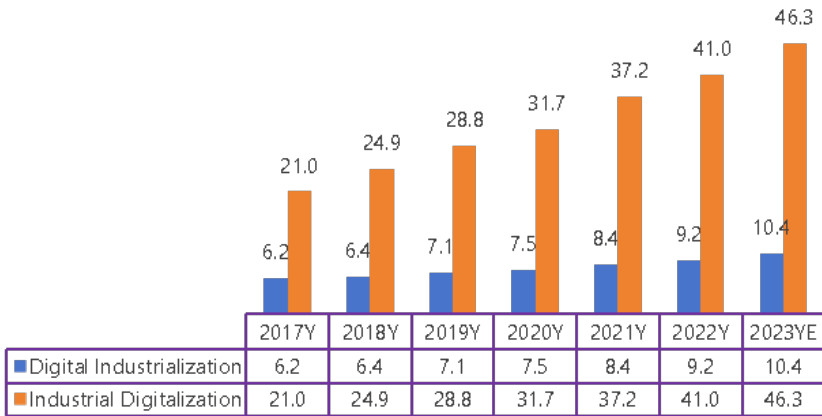


**Fig. 1.** Scale of China's Digital Economy from 2017 to 2022 (Unit: RMB trillion) (Data source: China Academy of Information and Communication Technology)

## 2 Digital Economy Background and Innovation and Entrepreneurship Education in Colleges and Universities

### 2.1 Talent Demand in the Era of Digital Economy

According to the Forecast Report on Market Demand and Development Trend of China's Digital Economy from 2022 to 2027 (Figure 2), the number of emerging enterprises in the field of digital economy has continued to grow in recent years, and the founders and core teams of these enterprises are often talents with strong innovation and entrepreneurship ability. This also indirectly confirms the importance of innovation and entrepreneurship in the era of digital economy. The demand for talents in the era of digital economy has undergone profound changes. In this era, the market needs more innovative vitality and entrepreneurial ability, which is not only the key to promote the development of various industries, but also an important cornerstone to realize personal career development and entrepreneurial dreams.<sup>[2]</sup>.



**Fig. 2.** Market Size of China's Digital Industrialization and Industrial Digitalization from 2017 to 2023 (Unit: RMB trillion)

(Data source: China Academy of Information and Communication Technology, China Business Industry Research Institute)

## 2.2 Current Situation of Innovation and Entrepreneurship Education in Colleges and Universities

At present, the distribution of educational resources is uneven, and some universities have relatively insufficient investment in innovation and entrepreneurship education, which leads to uneven quality and effect of education. The existing research shows that among the innovation and entrepreneurship teachers in colleges and universities, 35.3% are counselors, 16% are professional teachers in the field of entrepreneurship, and 24% are professional teachers in the field of non-entrepreneurship. On the other hand, the integration of innovation and entrepreneurship education with the traditional education system is not enough, and some colleges and universities overemphasize the cultivation of entrepreneurial skills, while ignoring the cultivation of students' innovative spirit and humanistic quality<sup>[3]</sup>.

Under the background of digital economy and innovation and entrepreneurship, innovation and entrepreneurship education in colleges and universities is still facing new challenges. With the rapid development and application of digital technology, the threshold for innovation and entrepreneurship has been constantly lowered, but at the same time, higher requirements have been put forward for innovation and entrepreneurship talents. Many universities have set up special colleges or centers for innovation and entrepreneurship education. Colleges and universities need to keep up with the pace of The Times, constantly update the educational concept and content, integrate digital technology into innovation and entrepreneurship education, and cultivate students' digital innovative thinking.

### **3 Policy and Institutional Innovation of Innovation and Entrepreneurship Education in Universities from the Perspective of Digital Economy**

#### **3.1 Integrate Resources and Build an Innovation and Entrepreneurship Education Platform**

Universities can make full use of internal and external resources, including enterprises, research institutions and government departments, to jointly build innovation and entrepreneurship education platforms. Through the platform, students can obtain more practical opportunities and entrepreneurial resources, and enhance their innovation and entrepreneurship ability<sup>[4]</sup>.

#### **3.2 Strengthen Practical Teaching and Improve the Curriculum System**

Colleges and universities should increase the proportion of practical teaching and set up more practical courses related to innovation and entrepreneurship. Business mentors and industry experts can be introduced to participate in course teaching, providing real entrepreneurial cases and practical experience to help students better understand the entrepreneurial process and market environment.

#### **3.3 Establish an Incentive Mechanism to Stimulate Teachers and Students' Enthusiasm for Innovation and Entrepreneurship**

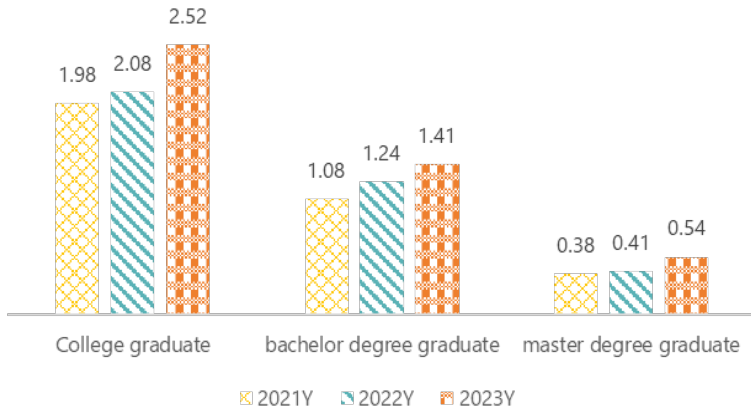
Universities can set up innovation and entrepreneurship scholarships, entrepreneurship funds and so on to encourage students to actively participate in innovation and entrepreneurship activities. Teachers with outstanding performance in innovation and entrepreneurship education can also be commended and rewarded to stimulate their enthusiasm for innovation and entrepreneurship education.

#### **3.4 Strengthen School-Enterprise Cooperation and Broaden the Channels for Students' Innovation and Entrepreneurship**

Colleges and universities can rely on the advantages of characteristic education, carry out innovation and entrepreneurship projects with enterprises, and look for various cooperation opportunities, so as to provide students with more practical opportunities and entrepreneurial resources. Through school-enterprise cooperation, students can have a deeper understanding of the industry development trend and market demand, laying a foundation for future entrepreneurship.

According to relevant data (Figure 3), the entrepreneurship rate of college graduates has been increasing year by year in recent years, which is inseparable from the efforts of colleges and universities to carry out entrepreneurship education. However, compared with the development needs of the digital economy era, the innovation and entrepreneurship education work in colleges and universities still needs to work harder.

Therefore, colleges and universities need to continue to explore innovation and entrepreneurship system innovation, design talent training programs that meet the needs of the new era, and cultivate more college students with innovation and entrepreneurship literacy and ability.<sup>[5]</sup>



**Fig. 3.** Entrepreneurship Rate of 2021-2023 Graduates with Various Degrees (Unit: %) (Data source: Research on Employment Quality of College Students in 2024, Xinjincheng Research Institute)

## 4 Construction of Evaluation System Based on the Perspective of Digital Economy

In order to comprehensively evaluate the effect of innovation and entrepreneurship education in colleges and universities, it is necessary to build an evaluation system that can fully reflect the needs and characteristics of education under the background of digital economy. The system needs to consider not only traditional educational outcomes, but also new indicators such as digital skills, innovative thinking, entrepreneurial practices, and the ability to adapt to the digital economy<sup>[6]</sup>.

### 4.1 Innovation and Entrepreneurship Curriculum

Colleges and universities should provide rich and high-quality courses related to innovation and entrepreneurship, covering theoretical learning and practical operation. For example, courses such as "Entrepreneurship education for College students" and "Product Design Thinking" offered by Peking University not only teach basic theories, but also cultivate students' innovation awareness and problem-solving ability through project practice. The curriculum needs to keep pace with The Times and introduce the

latest digital economy knowledge and technology, such as big data, artificial intelligence, blockchain, etc.

## **4.2 Construction of Teaching Staff**

Efficient teaching staff is the key to innovation and entrepreneurship education. Colleges and universities should attract and train mentors with rich entrepreneurial experience and industry background to provide professional guidance and support. Taking Tsinghua University as an example, it has more than 100 mentors with rich entrepreneurial experience and industry background, who can provide students with all-round guidance, including business plan writing, market analysis, team building and so on.

## **4.3 Practice Teaching**

Entrepreneurial practice is the main method to test students' innovative ability and entrepreneurial potential. Colleges and universities should encourage and support students to participate in various innovative and entrepreneurial practice activities, such as competitions, simulated entrepreneurship, internship and training. Zhejiang University holds more than 50 innovation and entrepreneurship practice activities every year, with more than 1,000 students participating, which effectively improves students' practical ability and teamwork spirit<sup>[7]</sup>.

## **4.4 School-enterprise Cooperation Projects**

School-enterprise cooperation projects are an effective way to promote the close combination of innovation and entrepreneurship education and industrial practice. More than 20 innovation and entrepreneurship projects carried out by SJTU in cooperation with well-known enterprises such as Alibaba and Huawei not only provide rich resources and platforms, but also provide students with valuable practical opportunities and career development paths.

## **4.5 Students' Innovation and Entrepreneurship Achievements**

The achievement of students' innovation and entrepreneurship is an important indicator to evaluate the effect of education. Fudan University's student entrepreneurship projects in the past five years have received a total financing of more than 100 million yuan, and several projects have been recognized by the market, reflecting the effectiveness of the education system in cultivating entrepreneurial talents with market competitiveness.

## **4.6 Innovative and Entrepreneurial Atmosphere**

Creating a good atmosphere for innovation and entrepreneurship is the key to stimulate students' enthusiasm for innovation. Nanjing University regularly holds innovation and entrepreneurship forums, entrepreneurship competitions and other activities to enhance

the innovation culture on campus and stimulate students' entrepreneurial passion by providing communication platforms, sharing successful cases, and inviting industry experts to give lectures.

#### 4.7 Technology Transfer and Achievement Transformation

Technology transfer and achievement transformation are important symbols to measure the scientific research strength and social contribution of universities. The total number of technology transfer projects of ordinary universities in Guangdong Province in the past five years is 5477 (Table 1), and the number of patent applications and authorization has increased steadily, indicating that universities play an important role in promoting the transformation of scientific and technological achievements and promoting industrial upgrading<sup>[8]</sup>.

**Table 1.** Signed technology transfer data of universities in Guangdong Province from 2019 to 2023

Item Time	Signing technology transfer contract (Unit: Item)	Contract amount (Unit: Ten thousand yuan)	Actual income for the year (Unit: Ten thousand yuan)
2019Y	591	64385.5	17762.6
2020Y	691	175819.2	31231.1
2021Y	865	127813	33681.9
2022Y	1509	129001.6	32387.6
2023Y	1821	111907.7	31285.9
Total	5477	608927.0	146349.1

(Data source: Guangdong Provincial Department of Education)

Through the comprehensive evaluation of the above seven dimensions, we can comprehensively and objectively evaluate the effect of innovation and entrepreneurship education in colleges and universities, and provide a basis for continuously optimizing the education system and improving the teaching quality. On this basis, educational institutions should constantly adjust and improve the evaluation system to meet the needs of the rapid development of the digital economy. According to the above content, the seven dimensions can be integrated into a formula to calculate the comprehensive evaluation score of innovation and entrepreneurship education in colleges and universities. Suppose that the evaluation index score of each dimension is respectively:  $C, T, P, E, R, A, S$ . The weights of each dimension are respectively:  $W_C, W_T, W_P, W_E, W_R, W_A, W_S$ , Then the formula of the total evaluation score  $E_{total}$  can be expressed as  $E_{total} = W_C \cdot C + W_T \cdot T + W_P \cdot P + W_E \cdot E + W_R \cdot R + W_A \cdot A + W_S \cdot S$ <sup>[9]</sup>.

## 5 Conclusions

By introducing more digital courses and programs, universities can help students better master the knowledge of the digital economy, such as data analysis and artificial intelligence application. From the perspective of digital economy, the future development trend of innovation and entrepreneurship education in colleges and universities is diversification, practice and digitalization. Colleges and universities should pay close attention to market dynamics and technological development trends, constantly adjust and optimize the education mode, so as to cultivate more new forces that can quickly adapt to the needs of the digital economy era. <sup>[10]</sup>.

## Acknowledgments

Guangdong Province Philosophy and Social Science Planning Project (No. GD24XGL022). Education Science Planning Project of Guangdong Province (Special Project for Higher Education) (No. 2023GXJK174). Guangdong Food and Drug Vocational College "Double High School Plan" Project (SG03-02.6). Natural Science Project of Guangdong Vocational College of Food and Drug (2022ZR11, 2023ZR17).

## References

1. Wang Chunjiao, GenG Yanshu. Research and Practice of Innovation and Entrepreneurship Education in Colleges and Universities from the perspective of digital economy [J]. Journal of Hubei Open Vocational College. 2024, 37 (07)
2. Wang, L. & Liu, X. Research on the Construction of University Integrated service from the perspective of digital transformation [J]. Journal of Inner Mongolia University for Minorities (Natural Science Edition). 2024,08 (21)
3. Wang, L., Xu, Z., Zhu, G. et al. Exploration and research of generative artificial intelligence enabling network security talent training [J]. China Audio-visual Education,2023(09)
4. Wang Lei; Miao Chunyu. Research on the Path of University Digital Talent Training under the background of digital Economy [J]. Chinese University Teaching,2023(07)
5. Wang, J. & Lu, W. Deep integration of graduate maker education and professional education under the background of digital economy [J]. Economic Research Guide,2023(20)
6. Li, M., Zhang, X. & Ge, N. et al. On the Unity of Opposition of the cost of education digital development [J]. China Audio-visual Education. 2024 (08)
7. Liu, Y. & Wen, K. Research on the Integrated development of management education and innovation and entrepreneurship Education [J]. Science and Education Guide,2024(04)
8. Zhu Zhiting; Dai Ling. Comprehensive Wisdom Leads Education Digital Transformation [J]. Open Education Research,2023(02)
9. QIAN Jingjing. Research on agricultural specialty education and teaching based on "industry-university-research-teaching" under the background of rural revitalization [J]. Journal of Shandong University of Agricultural Engineering,2022(11)
10. Miao Fengchun. Digital transformation of Education in the change of Digital Civilization [J]. Electronic Education Research,2023(02)



**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

