

Research on Innovative Models for Cultivating Young Talent in the Context of the Digital Economy

Qi Chang^{1,a,*}, Zhili Liu^{1,b}

¹*School of Marxism, Dalian University of Technology, Dalian, China*

^a*176880780@qq.com*, ^b*liuzhili@dlut.edu.cn*

**Corresponding author*

Abstract: *This paper explores innovative models for cultivating young talent in the context of the digital economy. Addressing the current disconnect between the education system and the demands of the digital economy, it proposes a collaborative approach involving government, higher education institutions, and businesses. The importance of integrating digital skills and social innovation into youth education is emphasized, along with a strategic focus on industry-academia collaboration and community engagement. By drawing on international best practices and innovative pathways, this paper provides valuable guidance for nurturing young talent to meet the challenges and opportunities of the digital era.*

Keywords: *Digital Economy, Youth Talent, Innovation Path*

1. Introduction

In the current era, the emergence and rapid development of digital technologies, including artificial intelligence, blockchain, cloud computing, and big data, are propelling the global economy towards a trend of digital transformation. China places a high emphasis on the development of the digital economy, promoting it as a national strategy. Presently, China's digital economy is characterized by stable growth, ongoing structural optimization, and deeper integration between the digital and traditional economies. Digital transformation represents a disruptive innovation process, at its core involving organizational and talent transformation. Talent is the key driver of digital economy development^[1]. Against this backdrop, contemporary youth, growing alongside digital technology, have become an important force in the nation's development of the digital economy. They display notable characteristics such as a strong sense of innovation, high adaptability, continuous entrepreneurial spirit, a high acceptance of emerging technologies, and the courage to challenge new things. In China, the development of the digital economy not only offers unprecedented opportunities for the innovation and vitality of young talents but also places them in the midst of global competition for young talents. Given the backdrop of the digital economy, traditional models for cultivating young talents face significant challenges, necessitating the establishment of new models for cultivating young talents that meet the demands of the new era.

In the era of the digital economy, the primary goal for the growth and development of young talents is to nurture leadership in the digital economy, digital business skills, and digital governance capabilities. The key to the future prosperity of the digital economy lies in the ability to establish an independent and multidimensional model for cultivating young talents. Therefore, this paper proposes a "three-dimensional" model for nurturing young talents, driven by the government, higher education institutions, and businesses.

2. The Reality of Youth Talent Cultivation in China Under the Digital Economy

In the context of the digital economy, the cultivation of young talent in China is in a phase of active exploration. Despite significant achievements in certain areas, challenges remain, including a shortage of digital talent, a lack of targeted policy support, deficiencies in the forward-looking and practical aspects of higher education institutions' training systems, and a lack of strategic vision for cultivating young digital talent in some companies.

Firstly, although talent cultivation is generally in an exploratory phase, positive signs have emerged.

Higher education institutions, serving as the main training ground for young digital talents, are striving to effectively match talent training with market demand. Since 2019, a series of projects aimed at meeting the demand for scarce and complex talents needed for socio-economic development have been implemented. Some universities have also begun to establish digital technology and related interdisciplinary subjects. For example, in 2018, the Ministry of Education allowed 35 universities to establish undergraduate programs in artificial intelligence for the first time. By 2021, 440 universities across the country had introduced artificial intelligence majors, and 730 universities had introduced big data majors. In terms of integration of industry, education, and research, several well-known companies have joined forces with universities to explore new paths for cultivating young digital talents.

Secondly, regarding the shortage of young digital talents, the rapid development of the digital economy has increased the number of jobs in related industries, but the demand for digital talent continues to grow. According to data from the National Bureau of Statistics, in 2019, the number of employees in the information transmission, software, and information technology services industry reached nearly 3.5 million, but the proportion of digital talents with medium to high-level professional skills was not high^[2]. This was especially true in cutting-edge technology fields such as artificial intelligence, virtual reality, and intelligent manufacturing, where there was a lack of relevant talent. This shortage is reflected not only in the total number but also in the supply-demand gap for interdisciplinary talents. Compared with international standards, China's reserve of digital talents lags behind countries such as the United States, the United Kingdom, and India. In the field of artificial intelligence, the United States has over 850,000 practitioners, while China has just over 50,000. This reflects the inadequacies in universities' cultivation of students' digital skills and the shortsightedness of companies' talent cultivation strategies, leading to an increasing mismatch between talent demand and supply.

Thirdly, policies and measures for cultivating young digital talents are somewhat lacking. Attracting and training young talents needed by the development of the digital economy is the foundation for establishing a competitive advantage. Currently, China's policies on cultivating young digital talents are in an exploratory phase. On one hand, the role of the government in the cultivation of young digital talents, the objectives of these policies, and their effects remain unclear, indicating that many issues still need to be resolved at the strategic level to promote the cultivation of young digital talents. On the other hand, the specific policy system is still not comprehensive. At present, it is not clear which factors are crucial for training and attracting young digital talents, leading to the government's failure to form a comprehensive arrangement from strategic leadership, college training to industry integration. Fragmented policies are scattered across the overall talent planning and digital economy development planning.

Fourthly, higher education institutions lack foresight and practicality in cultivating young digital talents. Although universities are crucial bases for nurturing young digital talents, the current curricula and teaching methods often do not align well with the actual demands of the digital economy. The absence of courses and projects closely integrated with the industry makes it difficult for students to acquire the skills and experiences needed in the actual work environment within campus settings. Moreover, educational institutions are relatively slow in updating their curricula to match rapidly changing technology trends, limiting students' ability to innovate and adapt to future workplaces.

Fifthly, some enterprises lack long-term strategic planning in cultivating young digital talents. While some businesses have recognized the importance of young digital talents and invested resources in their development, most have not incorporated talent cultivation into their long-term development strategies. The lack of investment and planning for young talents' career paths, along with insufficient training and development opportunities, makes it challenging to continuously attract and retain high-quality young talents. Businesses need to realize that investing in the cultivation of young talents not only supports immediate business needs but is also crucial for ensuring future competitiveness.

3. International Experience in Cultivating Young Talent in the Context of the Digital Economy

In the context of the digital economy, countries around the world are exploring best practices for the cultivation of young talent to adapt to the rapidly changing technological environment and labor market demands. Here are four international experiences on the cultivation of young talent, each deeply exploring the successful strategies and practices of different countries.

Firstly, Germany's dual education system stands as an exemplary model for the cultivation of young talent internationally, especially against the backdrop of the digital economy. This model closely

integrates theoretical education with practical work experience, offering students the opportunity to learn in real workplace environments. Under this system, students spend part of their time in vocational schools learning theoretical knowledge, and the other part working as interns in companies. This combination allows students to better understand the practical applications of digital technology and cultivates versatile talents who meet the future labor market's needs. The success of this education model lies in its ability to keep pace with economic development and technological innovation, adjusting educational content and vocational training directions timely. Corporate participation in talent cultivation not only ensures the practicality and foresight of training content but also provides students with the experience of solving real work problems through internships, enhancing their problem-solving capabilities. Moreover, this model promotes close cooperation between schools and businesses, helping to build a mutually beneficial talent cultivation ecosystem.

Secondly, to adapt to the development of the digital economy, the Singapore government launched the Skills Future initiative, aimed at encouraging lifelong learning and enhancing the digital and innovative capabilities of its citizens. This initiative targets not only the youth but also workers of all ages, providing financial support and flexible learning opportunities to help people upgrade their skills or learn new ones to meet the demands of digital transformation. A notable feature of the SkillsFuture initiative is its wide industry coverage and personalized learning pathways. By collaborating with businesses across various sectors, the initiative offers learners a range of work-related training courses and qualifications, covering areas such as data analytics, cloud computing, artificial intelligence, and more. Furthermore, the government motivates individuals and businesses to invest in lifelong learning through incentives like financial subsidies and scholarships, creating a large talent pool for Singapore's digital economy transformation.

Thirdly, Finland is renowned for its innovative education system, which emphasizes self-directed learning and the cultivation of creative thinking abilities in students, particularly crucial for adapting to the requirements of the digital economy. Finnish schools encourage the use of digital tools and platforms for teaching, aiming to develop students' digital literacy and information processing skills. Additionally, Finland values interdisciplinary learning and project-based learning, stimulating students' innovative abilities and teamwork spirit through solving real-world problems. The flexibility and emphasis on personalized learning needs are distinctive features of the Finnish education system. Schools offer students a wide range of elective courses, allowing them to choose according to their interests and career plans. This education model not only helps students acquire necessary digital skills but also fosters their innovative thinking and self-driven learning ability, laying a solid foundation for their future careers and lifelong learning.

Lastly, the United States pays special attention to STEM (Science, Technology, Engineering, and Mathematics) education and the cultivation of entrepreneurial spirit among young talent. American universities and research institutions offer rich resources for STEM education and research opportunities, encouraging students to engage in scientific research and technological innovation. Simultaneously, the U.S. education system emphasizes the importance of entrepreneurial education and practical experience, with many schools offering entrepreneurship-related courses and workshops, providing students the chance to apply theoretical knowledge in practice and embark on innovative projects.

The success of the U.S. lies in its ability to combine the depth of academic research with the breadth of entrepreneurial practice, offering students a comprehensive learning and growth environment. Through participation in innovative projects and entrepreneurial practices, students not only acquire advanced technological knowledge but also develop the ability to solve complex problems, teamwork spirit, and leadership skills. This comprehensive cultivation model has trained a large number of young talents with innovative spirits and practical abilities for the digital economy era, providing strong human resource support for America's technological innovation and economic development.

4. Innovative Pathways for Cultivating Young Talent in the Context of the Digital Economy

In the context of the digital economy, the primary goal for the growth and development of young talents is to cultivate leadership in the digital economy, digital business capabilities, and digital governance abilities^[3]. The future development of the digital economy hinges on the ability to establish an independent, comprehensive, and diverse model for cultivating young talents. To this end, this article proposes a "three-dimensional drive" model for cultivating young talents, centered around the

government, universities, and enterprises.

The inaugural framework is the amalgamation of “Strategic Orientation and Policy Reinforcement” for nurturing talents, as instituted by governmental entities. The primary step involves recognizing the pivotal role of young talent in spearheading the digital economy’s growth. The prevailing societal ethos has yet to embrace a consensus on prioritizing young talent development, rendering it a relatively nascent domain. In the digital economy era, it’s imperative to assign a strategic role to young talents in leading digital transitions, crafting forward-thinking and efficacious youth talent development schemes and policies. Ecological thinking should guide the strategic blueprint for young talent cultivation, focusing on fostering their innovative mindset, knowledge, and capabilities, while orchestrating a cohesive, integrative, and collaborative talent development framework. Emphasis on a systematic approach is crucial for the strategic planning of young talent development, given its multifaceted nature and broad stakeholder base, marking it as a cross-sectoral, interdisciplinary, and comprehensive endeavor. A systemic viewpoint is essential, advocating for interdisciplinary research, enhanced interdepartmental cooperation, comprehensive strategies, and a unified systemic effort. Additionally, the planning should be problem-centric, aligning with emerging trends and contexts, leveraging the pivotal role of key projects and metrics, and accentuating young talents’ significant influence as digital transformation catalysts. For instance, young talents serve as the fountainhead of strategic national strength in digital technology innovations essential for business model evolution and industrial overhaul. Similarly, in furthering rural revitalization upon historic poverty eradication achievements, in closing digital divides and linking isolated data realms, young talents emerge as crucial drivers. Moreover, amplifying policy backing for young talent’s digital acumen cultivation is vital. Governmental actions should intensify in financial allocations and infrastructural enhancements, enriching young talents’ developmental prospects. It necessitates marrying overarching designs with localized adaptations, creating a tiered young talent nurturing ecosystem. Proactively aligning with young talents’ maturation and excellence trajectories, setting benchmarks, developmental frameworks, and execution blueprints for young digital talents are fundamental. This entails incentivizing premier, research-oriented universities to bolster foundational and interdisciplinary subjects, augmenting foundational digital technology research capabilities and elite basic discipline talents. Applied universities should be encouraged to produce high-caliber, specialized technical professionals. Attention to digital infrastructure’s strategic deployment, elevating educational quality, and enriching access to premier educational resources, is imperative. Engaging young talents in regional and international dialogues and cooperation is the third cornerstone. Enhancing both domestic regional collaborations and global exchanges in young talent cultivation is paramount. The uneven geographical distribution of young talents, with a pronounced disparity favoring eastern regions over the central and western areas—where a dire scarcity of young talents undermines digital economy progress—necessitates increased policy support and innovative collaborative cultivation models for the western expansion strategy, propelling digital economic growth and offering abundant resources and platforms for young talents in these locales. Given the digital economy backdrop, accentuating international cooperation in young talent cultivation is essential. Contemporary Chinese youths, nurtured in a globalized milieu and seamlessly integrated into the global fabric, view the world through an egalitarian lens. Digital technology’s evolution, bridging the global divide, affords Chinese young talents expansive vistas and opportunities. The government is urged to adopt an expansive international outlook in strategic planning, exploring novel avenues for young talents’ international cultivation and integration. This encompasses prioritizing the integration of world-class university resources, leveraging industry digital transformation platforms for cutting-edge technological exchanges among young talents, nurturing and attracting exceptional young talents with global perspectives aligned with digital economy demands, and convening young talent development symposiums.

The “Industry-Academia Collaboration and Innovation” model meticulously orchestrates a dynamic interchange between the realms of education and the digital economy, laying the groundwork for young talents to evolve into the vanguards of technological progress. This framework is ingeniously designed to dissolve the barriers traditionally separating academic theory from industry practice, thereby furnishing young talents with a comprehensive, hands-on understanding of digital technologies and their practical applications.^[4] Universities, under this paradigm, are tasked with a pivotal role: to continuously refine and adapt their curricula to stay abreast of the relentless pace of technological advancements. This involves not only the integration of advanced digital tools and methodologies into the academic syllabus but also a shift towards a more interactive, project-based learning approach that echoes the real-world scenarios students will face in their professional careers. Such an educational strategy ensures that graduates are not merely passive recipients of knowledge but active contributors to the digital landscape, equipped with a robust set of skills and a problem-solving mindset. The

collaboration extends into creating platforms where students can engage directly with industry through diverse initiatives like internships, live projects, and research collaborations. These opportunities provide a critical link between academic learning and practical application, allowing students to experience firsthand the challenges and intricacies of the digital economy. They emerge from these experiences not just as job-ready individuals but as innovators capable of steering digital transformation initiatives within their future workplaces. For the industry, this model opens a conduit to a fresh infusion of talent, imbued with the latest technological knowledge and innovative thinking. Companies benefit from the influx of new ideas and approaches that young talents bring, essential for driving innovation and staying competitive in the digital age. This relationship also allows businesses to directly influence the development of future workforce skills, ensuring that the emerging talents are well-aligned with the industry's evolving needs. Moreover, this model champions the development of incubation centers and innovation labs within academic settings, in close cooperation with industry partners. These centers are not just learning spaces but breeding grounds for innovation, where young talents can experiment with new ideas, develop prototypes, and work on solutions that have the potential to address real-world problems. These initiatives not only enhance the entrepreneurial skills of students but also facilitate the translation of academic research into commercial ventures, contributing to the broader ecosystem of innovation and economic development. Through the "Industry-Academia Collaboration and Innovation" model, the educational journey of young talents becomes deeply intertwined with the practical, innovation-driven needs of the digital economy. This holistic approach not only prepares students to thrive in a technologically driven world but also ensures that industries are continually rejuvenated with innovative solutions and a skilled workforce, ready to navigate and shape the future of the digital economy.

The "Community Engagement and Social Innovation" model presents a forward-thinking approach to leveraging the dynamism of young talent in the digital age, aiming to channel their skills and innovative capacities towards addressing some of the most pressing social challenges of our times. This model transcends traditional educational paradigms by intertwining digital literacy with a profound sense of social responsibility, urging young individuals to direct their technological prowess towards societal betterment^[5]. It fosters an environment where the application of digital solutions extends beyond commercial or personal advancement to encompass initiatives that enhance healthcare accessibility, promote educational equity, advance environmental sustainability, and foster social inclusion. At the heart of this model lies the conviction that young talents can act as pivotal change agents within their communities. Through active engagement with community groups, non-profit organizations, and governmental bodies, these young innovators are encouraged to deploy their digital acumen in crafting solutions that not only address but also anticipate the needs of society. Such engagements offer a dual benefit: they provide tangible improvements in community welfare while simultaneously imbuing young talents with a robust understanding of their potential impact on societal progress. Educational institutions and policy frameworks play instrumental roles in nurturing this model. By integrating community service and social innovation projects into their curricula, schools and universities can offer students a holistic education that extends beyond the confines of the classroom. This integration allows young talents to apply theoretical knowledge in practical, real-world settings, thereby enhancing their learning experience and broadening their perspectives on the societal implications of technology. Moreover, this model champions the development of platforms that facilitate direct interaction between young talents and social organizations. These platforms not only serve as a bridge connecting the innovative capacities of the youth with the needs of society but also foster partnerships that can lead to sustainable social improvements. By participating in community engagement projects and social innovation challenges, young talents acquire invaluable skills such as empathy, teamwork, and leadership. These projects offer a real-world context for students to apply digital technologies innovatively, allowing them to witness firsthand the transformative power of their contributions. In fostering a generation of socially responsible digital leaders, the "Community Engagement and Social Innovation" model contributes significantly to the broader landscape of digital economy development. It ensures that the advancements in technology are harnessed not just for economic growth but also for creating a more equitable, sustainable, and inclusive society. Through this model, young talents emerge not only as skilled professionals in the digital realm but also as compassionate citizens committed to using their knowledge and abilities for the collective good of their communities and beyond. This approach ultimately cultivates a cadre of future leaders who are well-equipped to navigate the complexities of the digital age while championing social innovation and community welfare.

5. Conclusions

In concluding, addressing the challenges and leveraging the opportunities presented by the digital economy necessitates a revolutionary approach to cultivating young talent. A collaborative model that unites government, educational institutions, and the business sector emerges as a critical pathway. This synergy is essential for developing a generation endowed with the necessary leadership, digital business acumen, and governance capabilities. Emphasizing digital skills and social innovation within the educational framework is paramount, ensuring that young individuals are not only technologically adept but also innovative and socially responsible.

Strategic partnerships between academia and industry, coupled with active community engagement, are fundamental in equipping the youth with the competencies to navigate and thrive in the digital era. Drawing inspiration from international best practices and embracing innovative educational methodologies will be key in preparing them to address the complexities of a digital-centric global economy.

Ultimately, the journey towards a digitally empowered youth population is contingent upon our collective dedication to fostering an environment that nurtures continuous learning, adaptability, and a proactive engagement with the latest technological advancements. This commitment is vital for ushering in a future where young talents are capable of leading with vision, innovating with purpose, and contributing significantly to the digital and societal landscapes.

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