### The strategic analysis of promoting the integrated development of the "trinity" of education, science and technology

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#### Abstract

Deeply understanding that the "trinity" of education, science and technology, and talent is an objective requirement for advancing China's modernization, it is therefore necessary to strengthen the integrated development path of education, science and technology, and talent in the new era, and form a promotion strategy for the "trinity" of education, science and technology, and talent in the new era. Starting from the integration path, this article proposes specific promotion strategies and looks forward to the future.

#### **Keywords**

Education, Science and Technology, Talents, Trinity; Strategy.

#### 1. Introduction

General Secretary Xi Jinping pointed out in his report to the 20th National Congress of the Communist Party of China that education, science and technology, and talent are the fundamental and strategic supports for building a socialist modern country in an all-round way[1-6]. We must adhere to the principles that science and technology are the primary productive forces, talent is the primary resource, and innovation is the primary driving force. We should deeply implement the strategy of rejuvenating the country through science and education, the strategy of strengthening the country through talent, and the strategy of innovation-driven development. We should open up new fields and tracks for development, and constantly shape new drivers and advantages for development. The integrated arrangement and unified construction of education, science and technology, and talent reflect our Party's profound understanding of the laws of education in the new era, unique understanding of achieving Chinese-style modernization, and forward-looking understanding of the global competition situation[6-9].

Education holds a fundamental, guiding, and overall status and role, playing a decisive significance in cultivating excellent talents, enhancing the overall knowledge and cultural quality of the nation, promoting comprehensive human development, and strengthening the nation's innovative and creative vitality. The mission of education in the new era is to cultivate socialist builders and successors with comprehensive development in morality, intelligence, physical fitness, aesthetics, and labor, providing strong talent support for the realization of the Chinese Dream of national rejuvenation. Scientific and technological innovation is a key force in advancing Chinese-style modernization and the only way to promote high-quality development[7-9]. To build a socialist modern country in an all-round way, we must continue to expand the breadth and depth of scientific and technological exploration, strengthen national strategic scientific and technological forces, and strive to make scientific and technological innovation, the "core variable," become the "greatest increment" in promoting high-quality economic and social development. Talents are the strategic support for advancing Chinese-style modernization, the long-term plan for the development of the country and the nation, and an

important strategic resource for achieving national rejuvenation and gaining the initiative in international competition. This article analyzes the integration path of education, science and technology, and talent as a "trinity" and proposes specific integration strategies to promote this "trinity."

### 2. Analysis of the Integration Path for Promoting the "Trinity" Approach

Education nurtures the future, technology demonstrates strength, and talent is a strategic resource. The coordinated cooperation of these three elements is crucial for enhancing overall national strength. Without top-tier education, it is impossible to achieve top-tier technological strength and a steady stream of high-quality talent. Without technological leadership, it is impossible to achieve leadership in education and talent cultivation. Without a talent advantage, it is impossible to fully leverage the role of education and technology. The three are interconnected and mutually reinforcing. The relationship among them is that education is the foundation, talent is the resource, and technological innovation is the key. Good education can cultivate outstanding talent, and outstanding talent can better realize technological innovation and development, which in turn will feed back quality resources to education. This article summarizes the specific integration paths into the following three points.

#### 2.1. Optimize and enhance the quality of education

Education serves as the foundation, and only high-quality education can cultivate exceptional talents. Through education, talents are provided with systematic and scientific knowledge and skills training, enabling them to possess solid basic knowledge and skills, and laying a solid foundation for their future development. In the new era, with the rapid development of the economy, technology, and society, we must prioritize the development of education as an important initiative to drive the development of various undertakings of the Party and the country, continuously adapting education to the requirements of the development of the Party and the country's undertakings, meeting the expectations of the people, and matching China's overall national strength and international status. We must take high-quality development as the main line, deepen educational reform as the driving force, and aim to unite people's hearts, improve personality, develop human resources, cultivate talents, and benefit the people, while improving the educational mechanisms involving schools, families, and society. We must accelerate the construction of a high-quality education system, deepen comprehensive reform in the field of education, develop quality-oriented education, promote educational equity, advance the digitization of education, promote lifelong learning for all, and improve the overall quality of the people, promoting their comprehensive development.

# 2.2. Create an atmosphere for talent development and technological innovation

The development of technological innovation requires talent to drive it forward, while the growth and development of talent also rely on the support and promotion of technology. Technological innovation and talent cultivation are interdependent and mutually promoting. The interaction between technology and talent can promote the development of social economy and the improvement of people's lives. At the same time, technological progress will also bring new talent demands, requiring the continuous cultivation and introduction of high-quality talents who adapt to the development of the times. It is necessary to establish a collaborative development mechanism, strengthen the integration of technology and talent, and improve the transformation and application capabilities of scientific and technological achievements. Greater efforts should be made to create institutional mechanisms, work environments, and living environments conducive to technological innovation, enabling scientific and technological workers to focus their thoughts and energy on technological innovation,

enhancing their capacity for technological innovation, and firmly grasping the lifeline of technology in their own hands. More freedom and space for innovation should be given to talent, creating a relaxed and harmonious environment, fostering an atmosphere that values, loves, respects, and cherishes talent, enabling talent to truly focus on research, helping them establish themselves in their chosen fields, and enabling them to display their talents in a healthy and favorable environment. It is also necessary to improve the technological innovation system, optimize the positioning, layout, and configuration of national scientific research institutions, high-level research universities, leading technological enterprises, and national laboratory systems, and comprehensively promote the construction of innovation consortia, maximizing the synergistic effects of leading enterprises, universities and research institutions, and talent.

#### 2.3. Promote the feedback of technology to education development

Education and technology are inseparable. The development of technology has provided new knowledge, new methods, and new teaching approaches to education, making it more enriching, efficient, convenient, and accessible. At the same time, the field of education, especially higher education, is also a frontier for technological innovation, with faculty and students serving as vital forces for innovation. In the new era, the coordinated development of education and technology should be supported by technological means to promote the modernization, informatization, and intelligentization of education. This involves promoting the sharing and exchange of educational resources, establishing open educational resource repositories, and improving the utilization efficiency and quality of educational resources. By leveraging new technologies, we can empower changes in school management, teaching methods, and student learning styles, revolutionize teaching and evaluation models, and drive innovations in educational institutions and mechanisms. Additionally, we should strengthen the integration of teaching and research, as well as industry-education integration, widely integrate technological innovation resources, conduct collaborative and joint innovation, promote the transformation of scientific and technological achievements, and further enhance the feedback of scientific research to educational development.

#### 3. Analysis of promoting the integration strategy of "tripartite integration"

Based on the integration approach, we propose the following three specific strategies to strengthen the "tripartite integration" role of education, technology, and talent.

#### 3.1. Clarify the development objectives and prioritize the fields of focus

The development of education, technology, and talent should be coordinated with national development strategies and industrial policies, with clear development goals and preferred development areas. In terms of industrial direction, we should clarify the development priorities that can fully leverage regional advantages and potential, with a focus on overall planning and consideration. Guided by national goals and strategic needs, we should strengthen the construction of national strategic scientific and technological forces, take key core technologies as breakthroughs and main attack directions, and strive to solve major scientific and technological issues that affect and restrict the overall and long-term interests of national development. We should place the improvement of original innovation capabilities in a more prominent position and achieve significant breakthroughs in forward-looking basic research and leading original achievements. Attention should be paid to cultivating an innovative culture, expanding international scientific and technological exchanges and cooperation, and forming an open and innovative ecosystem with global competitiveness. We should improve the strategic layout of talent, adhere to the overall approach of cultivating talents in all areas, coordinate the construction of various talent teams, synchronize the planning and promotion of talent aggregation and major strategic implementation, and build a large-scale, structurally

reasonable, and high-quality talent team. We should accelerate the construction of internationally renowned important talent innovation centers and high-education districts, cultivate strategic national talents, and focus on building talent aggregation centers in specific regions.

## 3.2. Highlight the importance of addressing practical issues in economic and social development

In scientific and technological innovation and talent cultivation, we should focus on addressing practical issues in economic and social development, strengthen the practicality and pertinence of scientific and technological innovation and talent cultivation, promote the transformation and application of scientific and technological achievements, strengthen the integration of science, technology, and talent, and enhance their contribution to economic and social development. We should accelerate the pace of technological self-reliance and selfstrengthening, timely establish innovation consortia, and jointly solve "bottleneck" issues by combining advantageous forces. We should establish a dynamic adjustment mechanism for disciplines, accelerate the iteration and updating of professional knowledge systems around modern information technology fields such as integrated circuits, 5G, big data, artificial intelligence, and the metaverse, explore the establishment of cutting-edge, comprehensive, interdisciplinary, problem-oriented, and innovation and entrepreneurship education courses, and form a new curriculum system, textbook system, knowledge system, and education system. We should promote the "two-way flow" between schools and enterprises, jointly build a toptier talent sharing model, encourage high-level scientific and technological talents from enterprises to take up positions in universities, encourage teachers from universities and research institutions to conduct technological research in enterprises, create conditions conducive to teachers' mastery of new technologies, and guide more high-level talents to carry out interdisciplinary research on "bottleneck" issues. With an eye on the frontier of global scientific and technological development and the major strategic needs of the country, we should accurately identify the current talent gap and make targeted efforts to cultivate talents who can connect with industries and adapt to and lead the times through diversified front-end training. Through the driving force of the innovation chain and the nourishment of the talent chain, we can make the industrial chain more prosperous. We should also coordinate the construction of skilled talent teams in "niche" industries and cultivate "great craftsmen" in more fields to safeguard the high-quality development of major projects and key areas.

#### 3.3. Reform the support model for basic research

Encourage various forces to participate in collaborative education, empower the cultivation of top-notch innovative talents, create a favorable environment conducive to the sustainable development of education and technology, and further enhance the scientific research support capabilities, innovation level, and international competitiveness of China's higher education institutions, research institutes, and technology-based enterprises. With the core of refining high-level basic scientific issues, we should reform the support model for basic research by focusing on the proposal and resolution of high-quality basic scientific issues. In response to the current phenomenon of excessive "hats" for various talents, it is necessary to actively promote the reform of talent support models, focus on cultivating talents' entrepreneurial spirit, and encourage outstanding scientific and technological talents to take on the new mission of serving the country and strengthening the nation through technology in the new era. We should form incentive mechanisms from various aspects such as ideological incentive, behavioral incentive, goal incentive, training incentive, competitive incentive, promotion incentive, and role-model incentive, strengthen intellectual property protection, increase support for young talents, encourage and support scientific and technological personnel from research institutes and universities to establish, lead, or jointly establish technology-based enterprises with their

scientific and technological achievements, and stimulate the innovation and entrepreneurship vitality of talents. We should explore the establishment of long-cycle talent support cluster projects, gather talent advantages to tackle "bottleneck" issues, and promote the formation of an innovation ecosystem conducive to researchers engaging in long-cycle, high-risk, and disruptive basic research work.

#### 4. Conclusion

When education thrives, so do talents. When talents thrive, so does the nation. When the nation is strong, science and technology thrive. When science and technology thrive, so does education. Education determines not only the present but also the future of mankind. The prosperity of talents brings about the prosperity of the country, and the strength of talents brings about the strength of the country. A strong nation is more conducive to the development of science and technology, and the development of science and technology can better feed back high-quality resources to education. On the new journey, we should correctly understand and handle the relationship between education, science and technology, and talents, fully implement the Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, strengthen our confidence, work hard, deeply implement the strategy of invigorating the country through science and education, the strategy of strengthening the country through talents, and the strategy of innovation-driven development, and strive hard to realize a strong, prosperous, democratic, civilized, harmonious, and beautiful socialist modern country at an early date.

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