

# Research on Training of Scientific and Technological Innovation Talent

**Kai Xiong**

*Business School of Jiangnan University, Wuhan City, Hubei Province, China  
5548074@qq.com*

**Abstract:** *"Scientific and technological innovation talents training" should not only implement the strategy of rejuvenating the country through science and education, but also adhere to and improve the strategy of strengthening the country through talents. Since the 18th National Congress of the CPC, in various conferences, reports, speeches and theoretical documents, important discussions have been made by President Xi on "why to train scientific and technological innovation talents, what kind of scientific and technological innovation talents to train, and how to train scientific and technological innovation talents". President Xi's important viewpoints about scientific and technological innovation talent training have distinctive characteristics of the times, rigorous scientific characteristics and lofty people characteristics, and its value is embodied in three aspects: enriching and developing the Marxist scientific and technological innovation thought, planning the action guide of China's "scientific and technological innovation talent training", and contributing to the Chinese strategy of "solving the common problems facing mankind".*

**Keywords:** *Scientific and Technological Innovation; Talent Training; Important Viewpoint; Value embodiment*

## 1. Introduction

At present, China's economy is developing rapidly and scientific and technological innovation is making new breakthroughs, but there is a serious shortage of scientific and technological innovation talents. Since the 18th National Congress of the CPC, a series of important discussions have been made on "how to train and cultivate scientific and technological innovation talents" by Xi General Secretary in view of the severe reality of the serious shortage of scientific and technological innovation talents in China. In 2021, at the central talent working conference, Xi General Secretary emphasized that "we must strengthen our sense of hardship, pay more attention to the independent training of talents, and accelerate the establishment of competitive advantages in talent resources" [1], and it was required to resolutely implement the "scientific and technological innovation talent training" plans and outlines such as the Outline of the National Medium and Long term Education Reform and Development Plan (2010-2020), the National Medium and Long term Scientific and Technological Talent Development Plan (2010-2020).

In October this year, the report at the 20th National Congress of the CPC pointed out that "education, science and technology, and talents are the basic and strategic support for building a socialism modern country in an all-round way." This is the latest important statement of the Xi General Secretary on scientific and technological innovation talents. At present, in the new journey to achieve the second century goal of our country, we must adhere to the principle that science and technology are the first productive force, talent is the first resource, and innovation is the first driving force. We must thoroughly implement the strategy of revitalizing the country through science and education, the strategy of strengthening the country through talents, and the innovation driven development strategy, open up new areas and new tracks for development, constantly shape new driving forces and new advantages for development, and work hard to realize the great Chinese dream at an early date.

## 2. Main content of President Xi's important viewpoints about scientific and technological innovation talent training

The main content of President Xi's important viewpoints about scientific and technological innovation talent training reflects in the five aspects of the goal, direction, path, mode and mechanism of "scientific and technological innovation talent training":

### **2.1 Goal**

President Xi insisted on building us into a "world important talent center" as the strategic goal, highlighting that the general goal of "scientific and technological innovation talent training" is "moral, intellectual, physical and aesthetic, moral education first" [2]. He stressed that we should put scientific and technological innovation talents at a strategic height, vigorously cultivate and bring up "innovative scientific and technological talents with large scale, reasonable structure and excellent quality", and put forward the strategic goal of building China into a world important talent center from the broad perspective of the world scientific and technological talent competition.

"Talents are the foundation and core element of innovation" [3]. Xi General Secretary has repeatedly emphasized on different occasions that we should "grasp the strategic initiative, do a good job in top-level design and strategic planning, and accelerate the construction of a world important talent center and innovation highland" [4]. Xi General Secretary proposed that by 2025, China should have a main force of scientific and technological innovation, cultivate first-class scientific and technological leaders in key areas, have a group of leaders and pioneers in major scientific and technological fields and frontier cross cutting fields by 2030, and by 2035, the international scientific and technological strength and high-level talent team will be in the forefront of the world, putting forward a phased strategic goal for China to vigorously cultivate scientific and technological innovation talents.

### **2.2 Direction**

President Xi pointed out that "one era has its own problems, and each generation has its own mission" [5]. "Basic research is the source of the whole scientific system and the general organ of all technical issues" [6]. The Fifth Plenary Session of the 19th Central Committee of the CPC proposed to strengthen basic research, focus on original innovation, and to speed up systematic deployment and formulate and implement the Ten Year Action Plan for Basic Research (2021-2030). At present, if we want to catch up with developed countries in basic research and original innovation ability, we still need to increase investment. Through the vigorous training of scientific and technological innovation talents, we can reserve energy for improving our scientific and technological innovation ability.

### **2.3 Path**

In terms of talent training path, President Xi emphasized that "scientific and technological innovation talent training" should be started from children. He believes that children are active in thinking and have natural curiosity. They should cultivate their interest in science and stimulate their potential as scientists; Youth is the core of "scientific and technological innovation talent training", the main force of innovation, and the backbone of promoting social innovation and development; The middle-aged scientific and technological talents are the main body of the scientific and technological innovation team and the leading geese driving scientific and technological innovation. The training path from baby to top scientific and technological innovation talents is the embodiment of respecting the growth law of scientific and technological innovation talents.

At the same time, President Xi also proposed various channels for talent cultivation from the source of scientific and technological talents. He proposed that "we should attract world-class talents and attract high-end overseas talents" [7]. The 18th National Congress of the CPC issued a call to "open up the way to talents and recruit talents from all over the world" [8], and the 19th National Congress of the CPC emphasized the firm implementation of the strategy of strengthening the country through talents. In the report of the 20th National Congress of the CPC, President Xi also put forward the important statement of "striving to cultivate top innovative talents and gathering talents from all over the world", thus forming a dual channel pattern of "scientific and technological innovation talents training", which focuses on domestic training channels.

### **2.4 Mode**

President Xi pointed out: "We should improve the training mode of innovative talents, strengthen the cultivation of scientific spirit and creative thinking, strengthen the integration of science and education, school enterprise cooperation and other modes, cultivate a large number of innovative and entrepreneurial talents who are familiar with market operation and have scientific and technological background, and cultivate a large number of young scientific and technological talents" [9]. Support and guide colleges and universities to rely on their own advantages in discipline resources, talent resources and science and

technology resources, give play to the advantages of scientific research resources of scientific research institutes and the practical resources of enterprises, and build an open, shared, integrated and innovative education system. Encourage and guide industrial enterprises, venture capital institutions, entrepreneurship parks, scientific research institutes and other professional institutions to participate in talent training, and improve the long-term co construction model of schools, schools, institutions, schools and enterprises.

In 2005, President Xi said in his speech at Zhejiang University that "to promote interdisciplinary integration and complementary advantages, so as to give full play to comprehensive and overall advantages" [10]. Xi General Secretary stressed that it is necessary to strengthen the interdisciplinary and integration of disciplines, and vigorously cultivate interdisciplinary and multi-functional scientific and technological innovation talents. In 2021, the Ministry of Education confirmed that the first batch of 12 colleges and universities including Tsinghua University will build the Future Institute of Technology, which is a preliminary attempt by President Xi to explore a new mode of cultivating talents with scientific and technological innovation.

### ***2.5 Mechanism***

President Xi pointed out: "We should reform the mechanism of talent training, introduction and use, strive to bring up a large number of strategic scientific and technological talents who can grasp the trend of world science and technology, study and judge the direction of science and technology development, cultivate a large number of scientific and technological leading talents who are good at gathering strength and coordination, and cultivate a large number of entrepreneurs and highly skilled talents who are brave and good at innovation" [9]. It can be seen that "scientific and technological innovation talents training" needs a good mechanism and system. President Xi believed that China's old scientific and technological innovation talent management system did not adapt to the new social conditions, and we should reform the scientific and technological innovation system, Establish "innovative talent evaluation mechanism, establish and improve the evaluation system of scientific and technological talents oriented by innovation ability, quality and contribution, and create a high-quality growth environment for scientific and technological innovation talents [11]. If the system is smooth and the mechanism is flexible, talents will gather and the cause will flourish. To attract, retain and make good use of talents, the best environment is a good system and mechanism. At this stage, we should speed up the introduction mechanism, training mechanism, use mechanism, evaluation mechanism and incentive mechanism of scientific and technological innovation talents, and create a good institutional environment for innovative scientific and technological talents.

## **3. Salient features of President Xi's important viewpoints about scientific and technological innovation talent training**

### ***3.1 Distinctive characteristics of the times***

The important statement of President Xi on "the cultivation of scientific and technological innovation talents" reflects the distinctive characteristics of the times. The Sino US trade war and Huawei chip outage in 2018 fully demonstrated the fierce competition in science and technology around the world. In the international competition, the person who has mastered advanced and cutting-edge science and technology, and who has scientific and technological innovation talents, will be able to take the initiative in the world science and technology competition. It can be seen that the "cultivation of scientific and technological innovation talents" is extremely urgent. Under this background, President Xi put forward a series of important statements on "the cultivation of scientific and technological innovation talents", which pointed out the direction and practice path for the cultivation of scientific and technological innovation talents in China, and has distinctive characteristics of the times.

### ***3.2 Rigorous scientific characteristics***

The important statement of President Xi on the "cultivation of scientific and technological innovation talents" reflects the rigorous scientific nature. The important statement of President Xi on the "cultivation of scientific and technological innovation talents" was put forward in combination with the actual challenges of scientific and technological innovation in the new era of China and the fierce competition for scientific and technological talents worldwide. It adheres to the scientific principle of dialectical relationship between theory and practice, and has the scientific characteristic of integrating theory with

practice; At the same time, the important statement of President Xi on "the cultivation of scientific and technological innovation talents" is an important part of President Xi's scientific and technological innovation thought, an important part of President Xi's Socialism Thought with Chinese Characteristics for a new era, and a scientific truth that has been tested by practice and is most suitable for China's national conditions.

### ***3.3 Lofty people characteristics***

The important statement of President Xi on the "cultivation of scientific and technological innovation talents" reflects the lofty characteristics of the people. The report of the 20th National Congress of the CPC pointed out that "the people must be supreme", "the people centered development thought", "rivers and mountains are the people, and the people are the rivers and mountains", "serving the people is the essential requirement of building our country for the public and governing for the people"... "the people" is a main line throughout the report. It can be seen that the important statement of President Xi on the "cultivation of scientific and technological innovation talents" reflects the lofty people's character, vividly reflects the spiritual core of development for the people, development depends on the people, and development achievements are shared by the people, and the new development concept of "innovation, coordination, green, open, and sharing" [12], which contains the deep feelings of President Xi for the people, This is of far-reaching significance for us to enhance our "Four Confidence" and realize the Chinese Dream of the great rejuvenation of the Chinese nation.

## **4. Value embodiment of President Xi's important viewpoints about scientific and technological innovation talent training**

### ***4.1 Enriches and develops Marxist scientific and technological innovation thought***

Marx's statement in the Communist Manifesto that "the bourgeoisie has created more productive forces in its less than one hundred years of class rule than all the productive forces created by all previous generations" [13] contains rich ideas of scientific and technological innovation, and emphasizes that workers are the "primary productive forces". The important statement of President Xi on the "cultivation of scientific and technological innovation talents" not only enriches the Marxist scientific and technological innovation thought, but also combines it with Chinese characteristics, inherits and develops the socialism scientific and technological innovation thought with Chinese characteristics. It is the essence of President Xi's scientific and technological innovation thought, and also an important part of President Xi's Socialism Thought with Chinese Characteristics in the New Era.

### ***4.2 Plans the action guide of "scientific and technological innovation talents training" in China***

President Xi's important statement on "the cultivation of scientific and technological innovation talents", which plans the specific action guide of "the cultivation of scientific and technological innovation talents", deeply answers the important proposition of "how to cultivate scientific and technological innovation talents", and is an important action program to promote the "cultivation of scientific and technological innovation talents" in contemporary China to achieve major breakthrough achievements. The introduction channel of scientific and technological innovation talents, the construction of scientific and technological innovation talents team, the management system of scientific and technological innovation talents, and the training path of compound scientific and technological innovation talents advocated by President Xi all provide the action direction and realistic path for China to implement the strategy of "scientific and technological innovation talents training".

### ***4.3 Contributes China's strategy of "solving common problems facing mankind"***

The important discussion on "scientific and technological innovation talent training" reflects the scientific and technological innovation thought of President Xi, contains the development philosophy and ideas of Chinese path to modernization, and contributes to the Chinese strategy of "solving common problems facing mankind" for less developed countries and regions around the world. The issue of development is an unavoidable major issue for any country or region in the world. In the report of the 20th National Congress of the CPC, President Xi described Chinese path to modernization as follows: "Chinese path to modernization is a socialist modernization led by the CPC, which has the common characteristics of modernization in all countries, as well as Chinese characteristics based on their own

national conditions." The development, innovation and other ideas contained in the important statement of President Xi "Scientific and technological innovation talent training" provide important guidance and implementation path for the realization of Chinese path to modernization, It provides a new choice for all mankind to realize modernization. After the 20th National Congress of the CPC was held, Samir Ahmed, a famous Jordanian writer, said, "China in the new era is entering an unprecedented period of development. This development is not an imitation of the West or copying its industrial model, but is committed to the leapfrog and progress of its own innovation ability... China is making steady progress on its journey of national rejuvenation". In Ahmed's view, "Chinese path to modernization" is a major theoretical innovation, which will lead China's development to a new level, and will also provide important reference for other developing countries, including Arab countries, in their development and revitalization.

### Acknowledgement

Jiangnan University's 2022 school level scientific research project "Study and Research on President Xi's Socialism Thought with Chinese Characteristics in the New Era." (2022XZX002)

### References

- [1] Mei Changwei. *Strengthen talent work in an all-round way and strive to achieve the centenary goal of building the military* [N]. *People's Daily*, 2021.11.30
- [2] President Xi. *Doing well and taking the lead -- Thinking and Practice of Promoting the New Development of Zhejiang* [M]. Beijing: Political School Press of the Central Committee of the CPC, 2006:340
- [3] Document Research Office of the Central Committee of the CPC. *Excerpt of President Xi's Discussion on Socialist Economic Construction* [M]. Beijing: Central Document Publishing House, 2017:137
- [4] Zhang Yang, Zhao Yana, etc. *To forge ahead and speed up the building of a strong talent country* [N]. *People's Daily*, 2021.10.01 (002)
- [5] President Xi. *Opening up for Prosperity, Innovation and Leading the Future: Keynote Speech at the Opening Ceremony of the 2018 Annual Conference of Boao Forum for Asia* [M]. Beijing: People's Publishing House, 2018:9
- [6] Document Research Office of the Central Committee of the CPC. *Excerpt of President Xi's Discussion on Scientific and Technological Innovation* [M]. Beijing: Central Document Publishing House, 2016: 44
- [7] President Xi. *Speech at the Symposium of Scientists* [N] *People's Daily*, September 12, 2020 (002)
- [8] *Selected Works of Hu Jintao (Volume 3)* [M]. Beijing: People's Publishing House, 2016: 656
- [9] President Xi. *Speech at the National Science and Technology Innovation Conference, the Academicians' Conference of the Chinese Academy of Sciences and the 9th National Congress of the Chinese Association for Science and Technology* [N]. *Xinhua*, 2016-05-30.
- [10] President Xi. *Doing well and taking the lead -- Thinking and Practice of Promoting the New Development of Zhejiang* [M]. Beijing: Political School Press of the Central Committee of the CPC, 2006: 342
- [11] *President Xi's Talks on Governance (Volume 3)* [M]. Beijing: Foreign Language Press, 2020: 9253
- [12] *President Xi's Talks on Governance (Volume 2)* [M]. Beijing: Foreign Language Press, 2017:201
- [13] *Selected Works of Marx and Engels (Volume 1)* [M]. Beijing: People's Publishing House, 1995:277