

Cultivation of college students' sentiment of serving the country through science and technology: goal dimensions and implementation paths

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Abstract: Scientific and technological powerhouse is one of the strategic goals of building a socialist modernized country. College students are the main force for the construction of scientific and technological powerhouse in the future. As an indispensable core quality of college students, the sentiment of serving the country with science and technology shapes the moral behavior and value pursuit of college students in four dimensions: ambition, heart, virtue and love. Colleges can effectively cultivate students' sentiment of serving the country and promote the construction of China's scientific and technological powerhouse by improving teachers' competence, optimizing synergistic mechanism, reinforcing mission-driven, and perfecting practice system.

Key words: scientific and technological powerhouse; college students; sentiment of serving the country through science and technology

1 Introduction

A new round of scientific and technological revolution and industrial change is developing vigorously, and the new productivity has become an important driving force for economic and social development. Our country will be a scientific and technological powerhouse by 2035. The construction of a scientific and technological powerhouse not only requires a perfect system, advanced science and technology and cutting-edge scientific research equipment, but also requires scientific and technological workers to have a strong sense of serving the country. Colleges are the important main body of China's construction of a scientific and technological powerhouse, which not only produce many high-level scientific research results, but also send a large number of high-quality scientific and technological talents to all walks of life in China every year. In recent years, China's colleges have made remarkable progress in both the top-level design and practical exploration of scientific and technological talent cultivation, and the quality of talent cultivation has been continuously improved.

As an important strategic resource, college students can only take up the heavy responsibility given by the construction of a scientific and technological powerhouse only if they have the sentiment of serving the country through science and technology. The lack of the sentiment not only weakens the sense of mission and enterprising spirit of college

students, but even leads to the possibility that college students may use their scientific and technological expertise to engage in serious behaviors that are detrimental to our country, society and the public [1]. At present, there is a large space for China's colleges to research the sentiment of serving the country through science and technology both in theory and practice. In terms of theoretical research, scholars mainly focus on the connotation, characteristics and other levels of research about the sentiment of serving the country through science and technology. Academic understanding of the cultivation of the sentiment of serving the country through science and technology is relatively weak [2]. In the cultivation practice, more attention has been paid to the training of students' professional knowledge and ability, and the cultivation of the sentiment of serving the country through science and technology cannot be effectively put into practice. Therefore, it is necessary to re-examine the conceptual orientation of the training of college students, strengthen the cultivation of the core qualities of science and technology for the country, provide guidance for the future direction of talent training in colleges, so as to better serve the construction of China's scientific and technological powerhouse.

2 The target dimensions of the cultivation of college students' sentiment of serving the country through science and technology

The sentiment of serving the country through science and technology is to take patriotism as the essential requirement, to build a scientific and technological powerhouse as the goal, to prioritize independent innovation as the core, and the noble state of mind and deep heart for the country and the nation demonstrated through wholehearted dedication to China's scientific and technological undertakings. As an important part of socialist core values, the sentiment of serving the nation through science and technology guides college students' cognition and recognition of the value concept in four dimensions, namely, nurturing ambition, nurturing heart, nurturing virtue, and nurturing love [3], standardizes the value stance for college students, provides value orientation, and thus cultivates college students' excellent moral conduct and noble value pursuit.

First of all, raising aspirations for a strong country with science and technology. The construction of China's scientific and technological powerhouse is faced with both great opportunities and unprecedented challenges. The sentiment of serving the country through science and technology guides college students to set up the ambition of strengthening the country through science and technology, and helps college students to "revitalize their ambition", "increase their will" and "strengthen their motivation", and integrate their ideals into the construction of a strong country with science and technology.

College students keep striving for China to become a major scientific center and innovation highland in the world [4].

Second, the spirit of innovation to nurture the heart. As a positive psychological force, the sentiment of serving the country with science and technology prompts college students to always maintain a strong sense of curiosity and desire for knowledge, fosters new ideas, enables students to acquire new knowledge and deeply understand the fundamental laws and underlying logic of science and technology, which is conducive to actively seizing the commanding heights of the future scientific and technological development, and promotes the effective transformation of the scientific and technological achievements into new high-quality productive forces [5].

Thirdly, nurturing virtue through patriotism. Universities and colleges need to guide students in the nourishment of patriotism, cultivate science and technology to serve the country, make them keep in mind that "science has no borders, but scientists have a motherland", so that they can use scientific and technological achievements to enhance the well-being of the people, and aspire to become a new man of the times to take on the responsibility of the rejuvenation of the Chinese nation [6].

Fourth, nurturing love through human development. The sentiment of serving the country through science and technology should not only focus on the development of science and technology in China, but also look at the global and human development, adhering to the concept of science and technology for the good, planning scientific and technological development with a global vision, and endeavoring to resolve various risks and challenges in the process of constructing a community with a shared future for mankind, and contributing more China's wisdom and China's solutions. The purpose is to make the achievements of China's construction of a scientific and technological powerhouse better benefit mankind as a whole.

The four dimensions of the sentiment of serving the country through science and technology present a closely linked and mutually reinforcing relationship. Nurturing ambition, heart, morality and love together promote college students to firmly establish the ambition of strengthening the country through science and technology and carry forward the spirit of innovation, so as to contribute to the construction of China's scientific and technological powerhouse, the world's science and technology as well as the sustainable development of the human society.

3 The implementation path to cultivate college students' sentiment of serving the country through science and technology

In order to better cultivate students' sentiment of serving the country through science and technology, colleges should adhere to the principles of systematic thinking, integration of point and surface, and harmonious co-progress, and start from the four aspects of teachers' ability, mechanism optimization, mission driving, and strengthened practice, so as to effectively enhance the effect of cultivating students' sentiment of serving the country through science and technology.

3.1 Enhance teachers' ability to improve the emotional experience of college students in serving the country through science and technology

Teachers should stand on the starting point of the new era, deeply excavate the ideological value and spiritual connotation that can promote college students to serve the country, and adopt scientific integration methods to silently form the quality of college students. Firstly, the diversification of channels for mining the elements of sentiment of serving the country through science and technology is needed. On the one hand, the main channel of the curriculum and teaching materials should be utilized to improve the quality of the elements of sentiment of serving the country through science and technology by combining the characteristics and values of different courses. On the other hand, resources from government agencies, research institutes, industrial enterprises and others should be fully introduced to enhance the experience of college students on the elements of science and technology to serve the country by using a variety of methods such as course lectures, scenario simulation, experimental investigations [7]. Secondly, colleges and universities should highlight the characteristics of the elements of serving the country through science and technology. Based on the running orientation and professional training objectives, colleges should realize the selection and careful processing of the elements of serving the country through science and technology and inspire college students to aspire to devote themselves to the cause of strengthening the country through science and technology. Thirdly, educators should pay attention to the teaching design of the elements of serving the country through science and technology. The work should be done well in teacher role design, teaching method design, classroom management design and teaching evaluation design to transform the rich moral education resources into stories in the textbooks, cases in the classroom, and the charisma of the teachers, and effectively turn the sentiment of serving the country through science and technology into the values of college students [8].

3.2 Optimize the synergistic mechanism to cultivate the sentiment of serving the country

First of all, the mechanism of the unified leadership of colleges, functional departments and the participation of secondary schools should be established to cultivate the sentiment of serving the country through science and technology.

Civic and professional education should closely integrate moral education with talent cultivation, and highlight the cultivation of college students' sentiment of serving the country from the strategy of China's scientific and technological powerhouse. Secondly, the establishment of various types of courses containing educational resources for serving our country through science and technology is a complementary mechanism. Civic and political science courses should teach the basic Marxist position and viewpoints on the development of science and technology, while other philosophical and social science courses are responsible for providing social science education to college students and fostering their spirit of social commitment. At the same time, the natural science courses should strengthen the function of the ideological and political resources, so as to motivate students to dedicate themselves to the construction of a strong scientific and technological powerhouse. Thirdly, the management of collaborative education should be improved. Colleges and universities need to decompose the functions of cultivating the sentiment of serving the country through science and technology, strengthen the cooperation between subjects, and continuously improve the effectiveness of collaborative cultivation of college students for serving the country through science and technology.

3.3 Strengthen the mission-driven, inspire college students to serve the country through science and technology

On the one hand, enhance college student's awareness of science and technology to serve the country. Colleges and universities should enhance the mission responsibility of college students, so that they can always put the national interest in the first place, and aspire to dedicate their youth to the country's scientific and technological undertakings, and show their mission commitment to our country with down-to-earth vigor. Colleges should firmly oppose the excessive pursuit of personal life, egoism and lack of ambition and other undesirable tendencies, so that college students can deeply appreciate that only by actively engaging in China's scientific and technological undertakings and the great rejuvenation of the Chinese nation, can individuals have a broader stage for talent development [9]. On the other hand, college students are encouraged to practice the excellent skills of science and technology to serve the country, firmly grasp professional knowledge, and develop the spirit of innovation, so as to enhance the higher-order ability of scientific and technological innovation. Colleges should guide students to take the mission of strengthening our country through science and technology, exercise the ability to acquire knowledge in an interdependent world, maintain the enthusiasm and determination to pursue the frontiers of science and technology forever, and make a greater contribution to China's scientific and technological self-reliance and self-improvement.

3.4 Improve the system of scientific and technological practice, and enhance the ability to serve the country through science and technology

The sentiment of serving the country through science and technology is the result of the joint action of individual body and mind, existing cognition and new scientific and technological practices [10]. Colleges should build a scientific and technological practice system that deeply integrates "experimental training, innovation and entrepreneurship, social practice", and jointly educate college students to serve the country through science and technology. First of all, through "basic experiment-expansion experiment-innovation experiment", colleges can comprehensively enhance the innovation and practice ability of college students, make them educated by the value education of serving the country through science and technology unconsciously. Secondly, by participating in high-level subject competitions, publishing scientific research papers and patents, and setting up scientific and technological enterprises and other innovative and entrepreneurial activities, colleges can stimulate the interest of students in the research and development of basic and forward-looking technologies, and help them to shape the values of serving the country through science and technology and developing new-quality productive forces. Thirdly, we will guide college students to go into the field of science and technology to develop new productive forces. Colleges can guide students to enter enterprises, participate in science and technology

forums, serve as volunteers, etc., so that they can have a deep understanding of the current situation, hotspot, and difficulties of the science and technology industry in their professional field, which can expand their profound understanding of professional theory and engineering applications, help them establish loyalty to the science and technology industry, as well as responsibility and emotions towards society, and make students strive for the science and technology industry of our country for a lifetime.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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