Region-Educational Research and Reviews, 2025,Volume 7, Issue 6
DOI:10.12238/rerr.v7i6.4164
ISSN Online:2661-4634
ISSN Print:2661-4626

Cultivating the Spirit of Graduate Scientists in the New Era: Value Implications, Practical Predicaments and Cultivation Mechanisms

Keli Ding

School of Marxism, Jingdezhen Ceramic University, Jingdezhen, Jiangxi, 333403, China

Abstract: Scientist spirit, underpinned by patriotism, is a precious legacy accumulated by scientific and technological workers through long-term research practice and a spiritual treasure of the Chinese nation. In the context of the new era, cultivating scientist spirit among graduate students is of great significance in advancing national scientific and technological innovation, enhancing the quality of higher education talent cultivation, and guiding graduate students to establish correct values. Addressing the current challenges in fostering scientist spirit among graduate students, this paper explores optimized pathways to strengthen its educational function, thereby providing solid talent support for China's high-quality economic development.

Keywords: graduate students, scientist spirit, value implications, practical dilemmas, cultivation mechanisms

1. Introduction

The report of the 20th National Congress of the Communist Party of China emphasized that "education, science, and technology are the foundational and strategic pillars for building a modern socialist country in all respects. We must uphold the principle that science and technology are the primary productive forces, talent is the primary resource, and innovation is the primary driver of development, and implement the strategies for invigorating China through science and education, strengthening the nation through talent, and pursuing innovation-driven development." [1] General Secretary Xi Jinping pointed out at the Scientists' Forum that "scientific achievements are inseparable from spiritual support, and scientist spirit is the invaluable spiritual wealth accumulated by scientific and technological workers through long-term practice."[2] He called for "vigorously promoting the patriotic spirit of serving the people and the nation, the innovative spirit of scaling new heights and daring to lead, the truth-seeking spirit of rigorous scholarship, the dedicated spirit of focusing on research without seeking fame, the collaborative spirit of teamwork, and the mentoring spirit of nurturing future talents." [3] As a vital force and talent reserve in advancing national scientific and technological innovation, cultivating scientist spirit among graduate students is an essential requirement for building China into a global leader in science and technology.

2. The Value Implications of Cultivating Scientist Spirit Among Graduate Students in the New Era

2.1 Empowering National Scientific and Technological Innovation

Scientist spirit is the invaluable legacy forged by generations of scientific and technological workers through relentless exploration and dedication to national rejuvenation. As potential leaders in scientific innovation, graduate students are at a critical stage of value formation and skill development. Cultivating their scientist spirit plays a pivotal role

in fostering patriotism, encouraging them to align personal growth with national progress; stimulating innovation to break conventional boundaries; and instilling a rigorous, truth-seeking attitude toward research. Strengthening their commitment to scientific integrity and innovation will nurture high-caliber talents with outstanding research ethics, creativity, and social responsibility, injecting sustained vitality into China's scientific advancement

2.2 Strengthening the Quality of Higher Education Talent Cultivation

Cultivating scientist spirit is key to improving the quality of graduate education. The spirit's emphasis on truth-seeking, rigorous scholarship, and national service aligns with higher education goals, enhancing collaborative innovation capabilities and fulfilling the fundamental mission of fostering virtue through education. It clarifies the direction of "for whom we cultivate talents" and defines the standards of "what kind of talents we cultivate"—those with integrity, perseverance, and a commitment to societal contribution.

2.3 Guiding Graduate Students' Value Orientation

Cultivating graduate student scientists can help them clarify negative values, achieve personal growth and development, and provide key guidance for shaping their correct values and orientation. At present, there exist negative phenomena such as "paper supremacy" and "academic impetuosity" in the field of scientific research, which can easily cause postgraduate students to be confused in value choices and fall into the predicament of pursuing short-term benefits and neglecting the essence of scientific research. The qualities such as being rigorous and realistic, daring to explore and willing to contribute contained in the spirit of scientists can guide postgraduate students to establish correct academic values, deeply understand that the essence of scientific research lies in exploring the unknown and pursuing the truth, and always adhere to the original aspiration and mission of scientific research. From the cognitive perspective, the connotations such as being rigorous, realistic and pursuing truth in the spirit of scientists can help postgraduate students establish a scientific cognitive system, enhance their discrimination and judgment ability, and resist the erosion of negative concepts such as utilitarianism and hedonism. From a behavioral perspective, the qualities of perseverance and innovation emphasized by the spirit of scientists can inspire postgraduate students to bravely overcome difficulties, be proactive and enterprising, gradually cultivate an indomitable will and the ability to solve problems independently, and strengthen their recognition and practice of correct values. Furthermore, the elements such as the sense of patriotism and social responsibility contained in the spirit of scientists can guide postgraduate students to combine their personal development with the needs of the country and society, enabling them to pay more attention to social values and national interests when choosing research directions and career development paths. and shape the correct values of a broad perspective and a broad sentiment, thus becoming new era scientific research talents with ideals, responsibilities and achievements.

3. Practical Dilemmas in Cultivating Scientist Spirit

3.1 Insufficient Promotion and Guidance

First of all, the publicity channels are single and lack innovation. At present, the promotion of the spirit of scientists mainly relies on traditional forms such as lectures and posters on campus, and the utilization of new media platforms is seriously insufficient, making it difficult to comprehensively cover the diverse life scenarios of postgraduate students. Meanwhile, there is a lack of innovative consciousness in the expansion of publicity channels, and the advantages of emerging media such as short videos and social media have not been fully utilized to spread the spirit of scientists in a more vivid and convenient way. Secondly, the promotional content has obvious deficiencies in terms of appeal and depth. At present, most promotional contents merely remain at the level of simply listing and presenting the deeds of scientists, failing to deeply analyze the core connotation of the spirit of scientists. Therefore, it is difficult to evoke the emotional resonance of postgraduate students. Secondly, the publicity is not sustainable and there is a lack of a long-term mechanism. The cultivation of the spirit of scientists is a long-term project that requires continuous and in-depth publicity and guidance. However, at present, the promotional activities of many universities are often concentrated in specific periods, such as science and technology festivals and academic months, lacking a regular promotional mechanism. As soon as the event ended, the publicity came to an abrupt halt, making it difficult to form a lasting influence. This is not conducive to postgraduate students internalizing the spirit of scientists into their own value pursuits and behavioral norms. Finally, the absence of a supervision and coordination mechanism affects the publicity effect. The supervision mechanism is not perfect. There is a lack of clear standards and supervisory subjects for the implementation of publicity work and the

assessment of publicity effects, which makes publicity work prone to perfunctory and formalism, and fails to truly achieve the expected publicity goals.

3.2 Imperfect Institutional Mechanisms in Universities

First of all, the curriculum design lacks systematicness and pertinence. The content related to the cultivation of the spirit of scientists in postgraduate courses in colleges and universities is rather scattered. Most of the relevant content is only interspersed in other professional courses or general education courses, without forming a complete curriculum system. Moreover, the professional characteristics and actual needs of postgraduates have not been fully considered, making it difficult for postgraduates to deeply understand and grasp the close connection between the spirit of scientists and their own majors. Secondly, the practical training link is weak. The cultivation of the spirit of scientists should not only be confined to the imparting of theoretical knowledge, but also require postgraduate students to experience and understand it personally through practical links. However, in current scientific research and practical activities in universities, more emphasis is placed on the output of scientific research achievements, while the guidance and cultivation of the spirit of scientists in practice are neglected. The number of social practice activities is limited and the forms are monotonous, which is not conducive to postgraduate students practicing and promoting the spirit of scientists in practice. Secondly, the poor management of teachers in colleges and universities leads to the insufficient exertion of teachers' exemplary role. At present, many universities take research performance indicators such as research project funds, the number of published papers, and awards for research achievements as the main basis for teacher assessment, professional title evaluation, and job promotion. However, the assessment weight of professional ethics, academic ethics, and the spirit of nurturing students is relatively low. As a result, some teachers, in pursuit of personal interests and career development, neglect the shaping of their own scientific spirit and the cultivation of students' values. Finally, the evaluation system is not perfect. The current evaluation system for postgraduate students mainly focuses on academic achievements and scientific research capabilities, with less consideration given to the spirit of scientists, resulting in postgraduate students neglecting the cultivation of their own spiritual qualities.

3.3 Superficial Understanding Among Graduate Students

First of all, the limitations of postgraduate students' own knowledge reserves and cognitive levels have affected their in-depth understanding of the connotation of the spirit of scientists. The education that postgraduate students receive at the undergraduate stage focuses on the accumulation of professional basic knowledge, and they have less exposure to various aspects of knowledge related to the spirit of scientists, such as history, philosophy, and culture. This makes them lack sufficient knowledge reserves to fully and deeply understand the essence of the abstract and connotative concept of the spirit of scientists when they enter the postgraduate stage. Secondly, the impact of the social environment and multiculturalism causes postgraduate students to have a deviation in their understanding of the connotation of the spirit of scientists. In today's society, ideological trends such as utilitarianism and pragmatism are prevalent. Some postgraduate students focus too much on the practical benefits brought by research achievements, such as scholarships, employment opportunities, and academic reputation, while neglecting the importance of qualities such as rigorous scholarship and pioneering innovation emphasized by the scientific spirit in the research process. Finally, postgraduate students lack the internal motivation to actively explore and learn the spirit of scientists. They think it has little to do with themselves, ignore its subtle influence on their own growth, passively accept education and guidance, and their understanding remains superficial.

4. Pathways to Cultivate Scientist Spirit

4.1 Strengthening Top-Level Design

First of all, the national education administrative department should play a macro guiding role. Incorporate the cultivation of the scientific spirit among postgraduate students into the overall strategic planning of national education development and formulate forward-looking and targeted policy documents. Clarify the cultivation goals, tasks and requirements to provide clear policy guidance for colleges and universities to carry out relevant work. Secondly, build a practical platform. Encourage research institutions, enterprises and postgraduate training units to cooperate and jointly establish postgraduate research and practice bases. Research institutions and enterprises possess rich practical experience

and innovative resources in scientific research. During the process of participating in actual scientific research projects, postgraduate students can personally experience the scientific research attitude and innovative spirit of scientists, combine theoretical knowledge with practice, and better practice the spirit of scientists. Finally, strengthen publicity and guidance to create a strong atmosphere that respects the spirit of scientists and attaches importance to the cultivation of postgraduate students. On the one hand, we should carry out in-depth research on the growth laws and the spirit of scientists, carefully select and cultivate typical figures, and make full use of traditional and new media to publicize the deeds and spiritual connotations of scientists, vividly demonstrating their outstanding qualities. On the other hand, we should vigorously promote the spirit of scientists, actively publicize the advanced deeds of outstanding scientific and technological workers, and strive to create a good social atmosphere that respects labor, knowledge, talent and creation, so as to stimulate the inner recognition of the spirit of scientists among postgraduate students.

4.2 Improving University Mechanisms

First of all, improve the curriculum system. Colleges and universities should integrate the education of the spirit of scientists into the postgraduate curriculum system. On the one hand, specialized courses related to the spirit of scientists are offered, such as "The Spirit of Scientists and Research Ethics" and "The Growth Path of Scientific Masters", inviting renowned scientists and researchers to serve as instructors. Through systematic course explanations, postgraduate students can gain a deep understanding of the connotation of the spirit of scientists, its formation background, and its specific manifestations in various research fields. On the other hand, integrating the education of the spirit of scientists into the teaching of other professional courses enables postgraduate students to be imperceptibly influenced by the spirit of scientists during the process of learning professional knowledge. Secondly, optimize the exemplary guidance of mentors. Supervisors are the guides on the scientific research path of postgraduate students, and their words and deeds have a profound influence on them. Colleges and universities should strengthen the training and guidance of supervisors, enhance their understanding and recognition of the spirit of scientists, encourage supervisors to set a good example in scientific research work, practice the spirit of scientists, serve as role models for postgraduate students, and guide them to establish correct scientific research values. Secondly, strengthen the construction of campus culture. Campus culture is of vital importance to the growth of postgraduate students. Colleges and universities should create a strong cultural atmosphere of the spirit of scientists, so that postgraduate students can be influenced at any time in their daily study and life. Finally, improve the evaluation and incentive mechanism. Establish a scientific evaluation mechanism, incorporate the spirit of scientists into the comprehensive quality evaluation, and examine the practice of the spirit of scientists by postgraduate students from multiple dimensions such as scientific research attitude, innovation ability, teamwork, and academic ethics. For postgraduate students who excel in the spirit of scientists, corresponding rewards and honors will be given, and the evaluation results will be referred to in the graduation and excellence evaluation.

4.3 Motivating Graduate Students' Intrinsic Drive

First of all, clarify the research goals and value guidance. Universities and supervisors should guide postgraduate students to formulate clear research plans in combination with their own interests, professional strengths and major national strategic demands. By holding academic frontier lectures, industry demand analysis and other activities, we help postgraduate students recognize the social and contemporary value of scientific research work, integrate their personal ideals into the construction of a strong country in science and technology, and enhance their sense of mission in scientific research. Secondly, postgraduate students themselves need to have a correct attitude towards scientific research. The cultivation of the scientific research spirit should be based on self-awakening and actively shape the academic character of "being rigorous, realistic and pursuing excellence". We must not only abandon the utilitarian mindset and view scientific

research as a long-term undertaking for exploring truth and serving society, but also cultivate the determination to endure the cold bench. We should devote ourselves to the protracted battle of scientific research with an attitude of proactive accumulation and tenacious perseverance, tempering our character in solitude and seeking breakthroughs and innovations through repetition. Finally, strengthen the positive feedback of scientific research practice. Colleges and universities should establish a mechanism of "process evaluation + phased incentives", and promptly affirm the phased achievements of postgraduate students and provide constructive feedback through regular group meetings, mid-term evaluations, etc. Meanwhile, postgraduate students are encouraged to participate in international academic conferences and industry forums to showcase their achievements and gain recognition from their peers, thereby enhancing their sense of self-efficacy.

References

[1] Xi Jinping. Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects - Report to the 20th National Congress of the Communist Party of China (October 16, 2022) [M]. Beijing: People's Publishing House, 2022:33.

[2] Xi Jinping. Speech at the Scientists' Symposium (September 11, 2020) [N]. People's Daily, 2020-09-12(2).

[3] Xi Jinping. Speech at the Scientists' Symposium (September 11, 2020) [N]. People's Daily, 2020-09-12(2).

Author Bio:

Keli Ding (1998 -), female, Han ethnicity, from Wuhai, Inner Mongolia. She is a postgraduate student. Her unit is the School of Marxism, Jingdezhen Ceramic University. Her research direction is ideological and political education.