Research on the Dilemmas and Countermeasures of Ideological and Political Education for Top-Notch Innovative Talents in Local Universities

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Abstract: The cultivation of top-notch innovative talents is key to implementing the strategies of strengthening the nation through education and innovation-driven development. As the foundational value and spiritual driving force of this cultivation, ideological and political education faces systemic dilemmas in the practice of local universities. This study focuses on the specific context of local universities and systematically analyzes the structural contradictions existing in three dimensions of ideological and political education: conceptual cognition, content models, and institutional mechanisms. These contradictions include the binary opposition between "ideological-political education" and "innovation" in conceptualization, a mismatch between supply and demand in pedagogical models, and insufficient support and guarantees within institutional mechanisms. In response, a three-pronged innovation path is proposed: shifting the philosophy from "instrumental addition" to "value integration"; constructing a four-dimensional collaborative educational ecosystem encompassing "curriculum, practice, network, and culture"; and establishing an institutionalized support system centered on diversified evaluation, a dual-mentor system, and cross-departmental synergy. This research aims to provide a theoretical reference and practical framework for local universities to build an ideological and political education system for top-notch innovative talents characterized by distinct features and significant effectiveness.

1. Introduction

Against the backdrop of intensifying global technological competition and the deep implementation of the national innovation-driven development strategy, the independent cultivation of top-tier innovative talents has become a core strategic pillar for achieving high-level self-reliance in science and technology, as well as for building a leading nation in education and human resources[1,2]. As the primary front for talent cultivation, higher education bears the heavy responsibility of providing the nation with strategic talents who possess both exceptional innovative capabilities and a profound sense of patriotism. The fundamental mission of ideological and political education is to foster virtue through education; it plays an irreplaceable leading and foundational role in shaping the value orientations of top-tier innovative talents, stimulating their

internal drive for innovation, and tempering their character and willpower[3].

In recent years, the continuous advancement of national initiatives, from the "Everest Plan" to the "Strong Foundation Plan", marks the increasing systematization of China's cultivation system for top-tier innovative talents. However, compared to key universities directly under the Ministry of Education, which possess abundant resources and mature models, local universities face more complex practical contexts when undertaking such cultivation tasks[4,5]. Local universities often face objective limitations regarding student demographics, faculty strength, research platforms, and financial support. In exploring specialized cultivation paths for top-tier innovative talents, these institutions are more prone to practical deviations, such as "prioritizing professional expertise over ideological education" and "emphasizing technical skills over holistic literacy". This leads to a blurred functional positioning of ideological and political education within the talent cultivation system, disconnected implementation paths, and weakened educational effectiveness. Therefore, it is of great significance to deeply explore the practical dilemmas and optimization strategies of ideological and political education in the cultivation of top-tier innovative talents at local universities[6].

Current research suffers from two main limitations. First, research subjects are largely focused on top-tier domestic research universities, with insufficient attention paid to local universities that possess unique characteristics in terms of resource constraints and mission positioning; consequently, there is a lack of targeted dilemma analysis and strategic research. Second, discussions on countermeasures often remain at the level of macro-principles-such as emphasizing "conceptual updates" or "model innovation"-but have yet to form a systematic implementation path or evaluation framework regarding how local universities can integrate their regional advantages, cultural resources, and disciplinary characteristics to achieve a deep, specific, and actionable fusion of ideological and political education mechanisms with the cultivation processes for top-tier innovative talents. This study seeks to operate within this research gap, deepening the understanding of the specific contradictions and breakthrough paths for ideological and political education for top-tier innovative talents within the specific field of local universities.

This study follows a logical progression of "theoretical interpretation, problem diagnosis, and path construction." First, it clarifies the core value of ideological and political education in the cultivation of top-tier innovative talents and the specific context of local universities, establishing the theoretical foundation of the research. Furthermore, it systematically analyzes the multidimensional dilemmas and their underlying causes faced by local universities in the practice of ideological and political education for top-tier innovative talents. Finally, it proposes an integrated system of innovative countermeasures that are both principled and actionable, specifically addressing the levels of concepts, models, and mechanisms.

2. Theoretical Connotations and Value Positioning

The cultivation of top-notch innovative talents transcends the mere transfer of professional knowledge; it aims to shape exceptional individuals capable of leading the future and assuming significant missions. In this process, ideological and political education (IPE) performs the core functions of "casting the soul, empowering the mind, and laying the foundation." Its value must be precisely positioned by integrating the developmental patterns and competency traits of such talents, with a particular focus on identifying the constraints and opportunities faced by local universities within this specialized educational field[7].

2.1 Core Functions of Ideological and Political Education

Ideological and political education provides indispensable value guidance, motivational support,

and a character foundation for the growth of top-notch innovative talents.

First, it provides fundamental value orientation and political guidance. Innovation is instrumental in nature, and its social benefits depend on the value choices of the innovator. Against the backdrop of profound global cultural integration and increasingly complex technological competition, the question of "for whom one innovates" becomes the primary concern. Through systematic theoretical education, national conditions education, and mission-driven education, IPE guides top talents to deeply understand the intrinsic unity between personal development, national strategy, and national rejuvenation. It builds a solid foundation of patriotism and socialist conviction, ensuring that their innovative practices serve major national needs and the common well-being of humanity, thereby avoiding the pitfalls of value disorientation or technological fetishism.

Second, it stimulates enduring endogenous motivation and spiritual willpower. Major innovations often stem from long-term exploration accompanied by frequent setbacks; they cannot be sustained by interest or utilitarian drivers alone. By fostering ideals and convictions, cultivating the "scientist spirit," and instilling a sense of national pride, IPE transforms external expectations into a strong individual sense of mission and dedication. This internal drive, rooted in value identification, provides the essential spiritual resilience and willpower that support talents in their willingness to endure solitude (the "cold bench") and venture into "no-man's lands."

Third, it cultivates a sound innovative personality and key competencies. Contemporary innovation paradigms emphasize collaborative problem-solving, and the influence of non-intellectual factors on innovative success has become increasingly significant. Through moral tempering, legal education, mental health guidance, and team-based practice, IPE systematically fosters key qualities such as responsibility, resilience, spirit of collaboration, and academic integrity. An innovator with a sound personality and noble character is better equipped to lead teams, integrate resources, and advance innovation responsibly within complex systems.

2.2 Challenges

The ideological and political education practices of local universities are deeply embedded within their specific resource endowments and mission statements, presenting a unique set of challenges.

Resource constraints constitute a practical bottleneck. Compared to universities directly under the central ministries, local universities are often at a disadvantage regarding student demographics, top-tier faculty, research platforms, and financial support. This disparity can easily lead training practices to tilt toward quantifiable professional skills, causing ideological and political education-which requires long-term immersion-to be marginalized or reduced to formalities. A lack of resources to support in-depth social practice, high-end lectures, and the construction of immersive experiential platforms restricts the innovation and effectiveness of educational formats.

Regional characteristics present a dual nature. Local universities are rooted in the economic, social, and cultural soil of their regions. Their rich local "Red" resources, industrial practices, and rural settings provide unique materials for conducting vivid ideological and political education. However, potentially conservative tendencies or limited perspectives within regional cultures may also pose constraints on the critical thinking and global vision required to cultivate top-tier talent. This requires ideological and political education to organically integrate open and forward-looking elements while strengthening local identity.

Mission positioning requires deep integration. The cultivation of top-tier innovative talent in local universities emphasizes serving regional development strategies, creating a differentiated complementarity with ministry-affiliated universities. This requires that their ideological and political education does not simply replicate existing models but must creatively fuse "locality"

with "excellence". It must guide students to closely link their personal innovative pursuits with practical needs such as regional industrial upgrading, cultural revitalization, and social governance. The goal is to cultivate local leading innovators who are both willing to work at the grassroots level and capable of achieving excellence while keeping the "national interest" in mind. How to achieve this high-level integration of positioning and character-building under limited conditions is the core challenge and the breakthrough point for innovation.

3. Realistic Dilemmas

Based on the theoretical analysis in the preceding sections, ideological and political education for top-notch innovative talents in local universities faces a series of intertwined and interlocking structural dilemmas at the practical level, which profoundly restricts the effectiveness of cultivating people. These dilemmas are mainly reflected in three key dimensions: ideological understanding, content and form, and the system and mechanisms[8].

3.1 Structural Deviations in the Understanding of Educational Philosophy

Philosophy is the guide to action, and cognitive bias directly leads to practical deviation. Local universities have significant misunderstandings regarding the value and positioning of ideological and political education in the cultivation of top-notch innovative talents.

"Ideological and political education" and "innovation" are placed in opposing situations. Some administrators and professional teachers hold a utilitarian mindset, simply equating ideological and political education with political discipline and behavioral constraints, viewing it as a normative force that emphasizes "obedience". On the other hand, they one-sidedly understand the cultivation of innovative talents as the transmission of professional knowledge and divergent thinking training, emphasizing "freedom" and "breakthroughs". This binary opposition leads to a common tendency of "emphasizing innovation and neglecting ideological and political education" in practice. High-quality resources and policy incentives are highly inclined towards explicit academic indicators such as papers, patents, and competitions, while ideological and political education is marginalized as an auxiliary or guarantee link, and its core function of cultivating people is weakened.

The ideological and political dimension in the cultivation goals is vague and narrowed. Although the curriculum texts all emphasize "both morality and talent," at the operational level, the connotation of "morality" is often simplified to bottom-line requirements such as political qualification and compliance with laws and regulations. It fails to deeply integrate national sentiments, scientific spirit, academic ethics, teamwork, and social responsibility into the core competence framework of top-notch talents. The goals of ideological and political education lack organic connection with the key qualities required by top students, such as breakthrough thinking, tenacious character, and leadership, resulting in a phenomenon of "generalization" and "virtualization" coexisting in the education process: being comprehensive in all aspects, but difficult to accurately focus on the key points of shaping an innovative personality.

3.2 Mismatch between Educational Content and Presentation Forms

Ideological deviations directly translate into teaching practices, manifesting as a severe disconnect between content supply, methodological approaches, and students' characteristics and developmental needs.

Regarding content supply, homogenization and a lack of contemporaneity are prominent issues. The teaching content fails to fully explore the rich ideological and political education resources

closely related to scientific and technological innovation practices, such as the spirit of serving the country in the history of science and technology, the collective struggle behind major projects, and the academic character and ethical choices of outstanding scientists. Lectures often remain confined to traditional theoretical frameworks, creating a disconnect with students' professional context and innovative experiences. Insufficient integration of fresh content such as cutting-edge technological ethics, the international innovation competition landscape, and the local practice of national strategies, leads to a lack of intellectual challenge and practical appeal for top students in the curriculum.

In terms of teaching methods, one-way instruction dominates, with a lack of in-depth interaction and practical exploration. Classrooms still primarily rely on teacher-centered lectures, failing to effectively respond to the strong independent learning abilities and critical thinking habits of top students. There is a lack of high-quality seminars, debates, in-depth analysis of cases, and other activities, leaving students in a passive receiving state. Practical teaching is particularly weak, often reduced to superficial visits or simple labor, failing to design practical projects that can deeply integrate value guidance and the innovation process, such as ethical discussions based on real scientific research projects, or social technology problem investigations combined with professional fields, resulting in a separation of knowledge and action.

In collaborative education, there is a disconnect between "ideological and political education" and "professional education." The construction of "curriculum-based ideological and political education" in top classes is not deep enough, and the awareness and ability of professional teachers to explore educational elements vary. There is a lack of regular collaborative mechanisms between ideological and political education teachers, professional mentors, and research mentors. Students' academic training, scientific research activities, and ideological and political education fail to form a synergy in terms of schedule, content, and evaluation. Ideological and political education fails to be effectively embedded in key innovation scenarios such as topic selection and project establishment, academic exchanges, and achievement evaluation.

3.3 Lagging Development of Supporting Systems and Mechanisms

The deep-seated difficulties stem from the weakness of the supporting system. Existing systems and mechanisms are difficult to adapt to the particularity and high demands of ideological and political education for top-notch innovative talents.

The teaching staff faces the dual challenges of competency structure and role positioning. The knowledge structure of ideological and political theory teachers may lag behind the development of science and technology. Their understanding of the cognitive characteristics and ideological trends of top students is not precise enough, which affects the depth and persuasiveness of teaching dialogues. Counselors are often caught up in administrative work and lack the ability to provide personalized and in-depth ideological guidance to top students. The ideological and political education responsibilities of professional mentors have not been clearly defined and effectively assessed, and their potential influence through personal example has not been systematically stimulated.

The orientation of evaluation and incentive mechanisms is biased. The evaluation of top students highly focuses on academic "hard indicators," and the evaluation of ideological and political qualities is often simplified into course scores or vague qualitative comments. There is a lack of scientific observation indicators that reflect social responsibility, academic integrity, and collaborative spirit. This evaluation of "emphasizing skills while undervaluing principles" sends the wrong signal to students. The incentives for teachers are also unbalanced. The effectiveness of ideological and political education accounts for a very low proportion in the professional teachers'

promotion and performance evaluation, making it difficult to motivate them to invest in value-leading work.

There is insufficient resource investment and cross-departmental collaborative guarantee. At the school level, there is a lack of targeted special resource support. Funding is limited for developing characteristic courses, hiring industry elites as off-campus ideological and political mentors, and organizing high-level practical activities. The collaborative education mechanism among departments such as academic affairs, student affairs, scientific research, and colleges is not smooth. There is a lack of strong top-level design and overall coordination, resulting in the dispersion of educational resources and fragmented actions, making it impossible to form a unified educational synergy that runs through the entire process of talent selection, training, and graduation.

4. Innovative Paths

To systematically break through the aforementioned challenges, the ideological and political education for top-notch innovative talents in local universities urgently needs a coordinated transformation of ideology, model, and mechanism, promoting its internalization from an external requirement to a core driving module of the talent cultivation system.

4.1 Ideological Innovation

The primary prerequisite for breaking through the predicament lies in the fundamental renewal of ideology. Local universities need to build a strategic consensus at the university level, especially among management and faculty, that "ideological and political literacy is the core competitiveness of top-notch innovative talents". It is imperative to clearly recognize that national sentiment, scientific spirit, ethical awareness, and social responsibility are the source of lofty innovative aspirations, the psychological resilience to resist scientific research setbacks, and the fundamental guarantee for realizing the greatest social value of innovative achievements. Ideological and political literacy should be explicitly and specifically incorporated into the training objectives and quality model of top-notch talents, giving it the same weight as academic innovation ability.

Based on this consensus, the next step is to promote the deep integration of ideological and political education goals with the growth cycle of top-notch talents. Design a "companion-style" value navigation system: Universities should strengthen the belief foundation and academic interest of freshmen. During the research training stage, universities should enhance education on ethics, collaboration, and engineering social responsibility. At the stage of achievement output and career choice, universities should focus on integrating personal development into the national strategic framework. At the same time, it is necessary to build a "dual-subject collaborative education" responsibility loop between professional education and ideological and political education. This can be achieved by clarifying the primary responsibility of professional mentors for "curriculum-based ideological and political education" through the system, and by enhancing the ability of ideological and political teachers to conduct value guidance in conjunction with the forefront of disciplines, forming a synergy of education.

4.2 Model Innovation

The implementation of ideology needs to rely on the innovation of the model. A three-dimensional ideological and political education new ecosystem should be built that breaks the boundaries of the classroom, integrates multiple scenarios, and fits the cognitive characteristics of top-notch students.

In professional core courses and cutting-edge seminar courses, systematically explore and

integrate ideological and political elements closely related to the development of disciplines. For example, teachers can incorporate major engineering case studies into engineering courses to analyze the spirit of independent innovation, collective cooperation, and national security awareness contained therein. In science courses, the philosophical significance of scientific discoveries, the integrity standards of experimental data, and the boundaries of scientific ethics are discussed. In humanities and social science courses, students are guided to think about the dialectical relationship between technological development and social governance, as well as cultural inheritance. A number of modular micro-courses such as "Science and Technology Ethics", "Innovation and Society", and "Scientist Spirit" could be developed and made available for top students to choose.

Embed ideological and political education in all aspects of students' scientific research training, discipline competitions, innovation and entrepreneurship projects, and social practice. In the scientific research project establishment and mid-term assessment, universities can set up self-assessment and defense sessions on "academic ethics and social value". In academic competition teams, universities can appoint ideological and political observers to enhance team cohesion and sense of responsibility. At the same time, teachers can conduct "mobile ideological and political classes", organizing students to go to the sites of major national projects, leading-edge innovative enterprises, and rural revitalization frontlines, enabling them to deepen theoretical understanding and stimulate the sense of responsibility for serving the country while witnessing the achievements of national development and solving practical problems. The practical results should not only be technical reports, but also include reflections on the social value of the project and the experience of team growth.

Use information to build an immersive and interactive ideological and political learning space for students. Universities can establish a database of ideological and political special topics for outstanding innovative talents, which includes cutting-edge technological information, interviews with experts, and virtual simulation experiments. Additionally, an AI-based learning companions could be developed to provide personalized guidance and case recommendations for students' ethical dilemmas and value confusions in scientific research. And students could be encouraged to carry out new media creation around technological hotspots and innovation stories, and realize self-education in interactive communication. The online platform should become a salon for ideological exchange, rather than a one-way channel for indoctrination.

4.3 Mechanism Innovation

Establish a diversified and comprehensive evaluation system that emphasizes both ideological and political literacy and innovation ability. Universities should reform the student evaluation mechanism, design observable and assessable scales for the development of ideological and political literacy, and incorporate the performance in areas such as ideals and beliefs, academic integrity, social service, and teamwork, with certain weights, into key aspects such as scholarship evaluation, graduate admission and retention, and honor awarding. Evaluation methods should be diversified, including self-statements, teacher and student reviews, feedback from practice units, and records of important behaviors. At the same time, universities should further reform the evaluation and incentive system for teachers, and consider the effectiveness of participating in the ideological and political education of outstanding talents as an important reference for the professional teachers' career advancement and award and honor evaluation. Special recognition and rewards should be given to the achievements of ideological and political teachers in integrating into professional education.

Promote a paired mentoring mechanism of "ideological and political mentors and academic mentors in synergy." For each outstanding student, assign them "dual mentors": the academic

mentor is responsible for professional guidance, while the ideological mentor is responsible for value navigation and ideological care. The two mentors jointly discuss the student's training plan and pay attention to their ideological trends and growth difficulties. Ideological and political mentors need to go deep into students' laboratories and research groups to carry out guidance in real academic scenarios and achieve "immersive" education. The school should provide special work subsidies and professional development support for ideological and political mentors.

Through the collaborative innovation and systematic reconstruction of the above-mentioned concepts, models, and mechanisms, local universities can build a new paradigm of ideological and political education for top-notch innovative talents with distinctive characteristics, strong endogenousness, and significant effectiveness, and truly cultivate outstanding innovators who can shoulder the great task of national rejuvenation.

5. Conclusion

This article systematically analyzes the practical difficulties and innovative paths of ideological and political education for top-notch innovative talents in local universities. The study points out that the core difficulties stem from a triple contradiction: cognitive bias of "emphasizing innovation while neglecting ideological and political education", a mismatch between the supply and demand of education models, and a lack of supporting mechanisms. The solution lies in implementing systematic reforms: ideologically establishing a consensus that "ideological and political literacy is a core competency," and promoting the deep integration of value guidance and innovative cultivation; building a four-dimensional collaborative and holistic educational ecosystem of "curriculum-practice-network-culture" in terms of models; and establishing a diversified evaluation system that emphasizes both ideological and political literacy and academic ability in terms of mechanisms, and improving the collaborative cultivation of "dual mentors" and cross-departmental resource integration mechanisms. Ultimately, through the coordinated promotion of concept reshaping, model reconstruction, and mechanism restructuring, ideological and political education can be truly internalized as the value core and spiritual motivation for the growth of top-notch talents, providing solid support for cultivating outstanding innovators who can shoulder the great task of national rejuvenation.

References

[1] Huang Weiwei. Analysis of Ideological and Political Education for College Students Based on Innovation Talent Cultivation [J]. Education Modernization, 2019, 6(A1): 255-257.

[2] Hu Yadong. Research on the Training Model of Ideological and Political Education for College Students in the Context of Chinese-style Modernization [N]. Spirit Civilization Newspaper, 2024-04-11 (B02).

[3] Wu Libo. Strategies and Practices of Ideological and Political Education Leading Innovation Talent Cultivation in Colleges [J]. Sichuan Labor Security, 2025, (15): 123-124.

[4] Peng Kaixuan, Mao Jin Yue, Zhan Jiaxuan. Research on the Dilemmas and Countermeasures of Ideological and Political Education in the Cultivation of Outstanding Innovation Talents in Colleges [J]. Public Relations World, 2025, (05): 82-84.

[5] Chen Li. Exploration of the Value and Realization Path of Ideological and Political Courses in the Cultivation of Innovation Talents in Colleges [J]. University, 2023, (03): 85-88.

[6] Fang Man, Liu Jinjie, Liu Qiang. Practice of the Big Ideological and Political Education System for Outstanding Innovation Talent Cultivation in Colleges [J]. Heilongjiang Education, 2023, (06): 8-10.

[7] Song Xilian. The Role, Dilemmas and Countermeasures of Ideological and Political Team Building in Talent Cultivation [J]. Public Relations World, 2024, (02): 118-120.

[8] Tan Ying. Reform of Ideological and Political Education for College Students from the Perspective of Innovation and Entrepreneurship Talent Cultivation [J]. Talent Resources Development, 2021, (13): 70-71.