

# Analysis of Cultivating Top Innovative Talents in Undergraduate Teaching Reform Under the “Four in One” Model

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**Abstract:** In the current landscape, cultivating top-notch innovative talents stands as one of the paramount tasks for universities. To attain this objective, undergraduate teaching reform is deemed imperative. Among various approaches, the “Four in One” training model emerges as a prevalent method, aiming to furnish students with a holistic educational experience while nurturing their innovative abilities and critical thinking through the integration of four key components. Commencing from this objective, the integration of general education and professional education development is explored to ensure the seamless implementation of reform and developmental measures.

**Keywords:** Undergraduate teaching reform; “Four in One”; Cultivation of top-notch innovative talents

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## 1. Introduction

With the growing demand for top-notch innovative talents from both the country and society, higher education institutions are increasingly focusing on nurturing individuals with innovative prowess and a practical mindset. As a pivotal aspect of higher education reform, undergraduate teaching reform has garnered significant attention within the education sector <sup>[1]</sup>. To better align with evolving social needs and educational objectives, many colleges and universities have embarked on exploring the “Four in One” training model. This model not only enhances students’ professional competence and practical skills but also fosters their innovative mindset, catering to their developmental needs <sup>[2]</sup>. This article aims to analyze the implementation of the “Four in One” training model, undertake reforms in undergraduate teaching, and delve into strategies for cultivating top-notch innovative talents. It seeks to explore the feasibility and effectiveness of these methods, offering valuable insights and inspiration for higher education reform.

## 2. Definition of “Four in One”

The term “Four in One” entails the integration of leadership, strategy, human resources, and operations into

a cohesive system<sup>[3]</sup>. Within this framework, leadership serves as a foundational element, encompassing organizational leadership style, values, and skills, thus laying a crucial cornerstone for overall development. Strategy assumes paramount importance, delineating the goals and direction of an organization. It should be formulated with scientific precision, considering factors such as market dynamics and competitive trends. Operations constitute vital mechanisms for strategic advancement, encompassing internal processes and systems that serve as the tangible foundation for achieving strategic objectives. Human resources form the bedrock for supporting operations and strategic growth, encompassing talent recruitment, incentives, assessments, and related functions<sup>[4]</sup>. Establishing a more scientifically driven human resource management system is essential to unlock potential and foster enthusiasm. The strength of the “Four in One” model lies in its adeptness at integrating all facets of the organization, fostering a collaborative and cohesive collective. It underscores the core values of the organization, ensuring not only clear goals and directions but also continuous refinement of operational mechanisms to adapt to market dynamics and challenges.

### **3. Strategies for cultivating top innovative talents in undergraduate teaching reform under the “Four in One” model**

#### **3.1. Adhering to the cultivation of moral character and enhancing students’ moral integrity through the “academy system”**

Creating an optimal educational environment conducive to student development is paramount in contemporary undergraduate education. Hence, the establishment of a robust educational management model is essential. Efforts should be directed towards fostering an atmosphere conducive to effective general education promotion, innovating within the new talent cultivation reform, and instituting a collaborative “academy system” that integrates both general and professional education. This approach aims to enhance student character development and optimize their overall quality.

The “academy system” represents a novel approach to student management, primarily transforming student dormitories into living and learning spaces within the university. By fostering cohabitation among students from various majors and academic years, the academy system promotes self-management and mutual growth. It bridges the gap between professional training and quality education, thereby cultivating desired behavioral traits and management practices through diverse educational methods. Emphasizing moral character development and cultural enrichment, it instills a robust sense of social responsibility and holistic quality in students.

Departing from the traditional major-based student management model, the academy system fosters a diverse and inclusive environment, encouraging peer learning, inspiration, and broadened perspectives. Additionally, it focuses on nurturing students’ social engagement and organizational leadership skills through diverse extracurricular activities and club organizations. By providing strong support through various educational methods and scientific behavior management, the academy system facilitates the cultivation of exceptional talents<sup>[5]</sup>.

To further enhance the academy-based education model and augment students’ overall quality, several key explorations have been undertaken. Firstly, universities should establish a novel student development education system aligned with socialist core values, constituting a crucial educational task. Capitalizing on the pivotal first year, universities should offer “Freshman Development Education” courses aimed at elucidating students’ four-year growth objectives. Through cultural and spiritual exploration, expert subject reports, inspirational alumni anecdotes, student role models, and functional department initiatives, students can grasp the institution’s ethos, discipline, and structure, fostering a sense of belonging and pride.

Promoting patriotism, collectivism, heroism, and optimism emerges as pivotal values in students’ growth

trajectory. By organizing patriotic education activities, collectivism lectures, and heroic deeds presentations, students gain insights into their nation's history and culture, enhancing patriotism and collective pride. Secondly, universities must leverage new online media to establish a comprehensive and coordinated education environment encompassing classrooms, dormitories, campus, and off-campus realms, domestic and international spheres, and the virtual world. This enriched environment affords students more opportunities and resources for holistic development, aiding their integration into society and fostering a sense of social responsibility and purpose.

Thirdly, schools should actively promote sports spirit and habit cultivation education, recognizing sports' role in fostering a healthy physique and competitive spirit. Through various sports activities like intercollegiate games and team sports, students imbibe teamwork and competitive consciousness. Simultaneously, attention to habit development, encouraging regular sleep, a healthy diet, and moderate exercise, contribute to students' physical well-being.

Lastly, schools must bolster academic counseling centers and provide professional academic guidance services, comprising student work management, counseling, and part-time counseling teams. Ensuring these teams possess extensive educational experience and professional knowledge enables personalized learning guidance for students. Attention should also be directed towards psychological counseling, academic progress monitoring, and fostering a conducive academic atmosphere. Establishing support systems for underperforming students further promotes comprehensive development in knowledge, skills, and conduct among all students.

### **3.2. Innovative talent training program: pragmatic learning of basic knowledge for students**

In recent years, several universities in China have actively spearheaded the reform of talent cultivation models, amalgamating general education, scientific research training, and innovative abilities within higher education reform<sup>[6]</sup>. Drawing inspiration from both overseas and domestic top-tier universities, they have instituted a novel talent cultivation plan characterized by hierarchy, personalization, and modularity<sup>[7,8]</sup>. These reforms aim to fortify students' knowledge foundations, broaden avenues for skill development, and facilitate discussions, top-level design, formulation, and review of various professional talent training programs and curriculum system reforms. These measures are instrumental in enhancing the quality of talent cultivation, aligning with the emerging trends and requisites of higher education reform and development domestically and internationally, while nurturing top-notch innovative talents. Simultaneously, these reforms afford students more opportunities for personalized learning and development, conducive to overall quality enhancement.

Firstly, promoting the integration of relevant professional resources can fully harness and showcase the strengths of various disciplines, while establishing disciplinary and professional risk warning mechanisms for shutdown and transfer. Only through such measures can team building and talent cultivation within disciplines be comprehensively demonstrated, averting issues of duplicate construction and homogenization in disciplines. The reform plan for the national college entrance examination enrollment system and the rollout of the latest undergraduate major catalog in 2020 provide robust support for schools to recruit and nurture students according to major categories. For instance, a university in Liaoning Province has streamlined resource allocation and propelled comprehensive education and teaching reform by consolidating the original 83 majors into 30 disciplines/major categories and 8 experimental classes. This initiative bolsters student application enthusiasm while maintaining the cohesion and correlation between majors and addressing employment dynamics. Implementing this reform measure will bolster teaching quality and enhance schools' competitiveness in employment, offering students a more diversified array of learning options.

Secondly, to better align with societal demands for talent cultivation, traditional educational paradigms need revision, with a focus on enhancing students' comprehensive qualities and foundational abilities, beyond mere professional skills, fostering holistic development. Hence, it is imperative to cultivate exceedingly robust and broad-spectrum talents, emphasizing "basic theories, basic knowledge, and basic skills" as the crux, and devising general education core courses imbued with distinctive characteristics and styles. These courses encompass a diverse array of subject knowledge, including fundamental knowledge of human civilization, alongside relevant basic life and career development skills, thereby constituting mandatory courses for undergraduate students. Ensuring the enduring and foundational role of these courses in students' studies necessitates the exploration and introduction of implementation measures such as "enhancing the quality construction of basic and core courses." In these measures, each professional basic course should establish grassroots teaching organizations helmed by responsible professors (associate professors) overseeing course construction, with a focus on teacher team building, textbook development, online course creation, and experimental and practical teaching design. Concurrently, the teaching organization model of "large class teaching and small class tutoring" should be fully executed for professional basic courses, deploying outstanding teachers for basic course instruction and young teachers or graduate students as teaching assistants. Additionally, professional basic courses should be completely disentangled from teaching and examination, employing third-party propositions for fair and impartial assessment of teaching efficacy.

Thirdly, universities should steer clear of prematurely constraining students' professional choices, a pivotal concern warranting in the present educational landscape. To address this issue, the new training program will realize a coordinated design of the undergraduate, master's, and doctoral integrated curriculum system. This entails a more flexible curriculum design that can be tailored to student's interests and strengths, enabling them to gain a comprehensive understanding of knowledge and skills across various fields of study. This expands students' growth horizons and forestalls the fragmentation and squandering of undergraduate resources. Moreover, the new training program will resolve the mechanism problem of course selection and credit recognition, enabling students to earn credits in different courses, thus better managing their learning progress and time allocation.

Finally, universities should prioritize the quality of first classroom education and comprehensively advance cultural education to foster the development of the five types of classroom education. This constitutes a pivotal measure at present, conducive to enhancing students' comprehensive qualities and professional competence. It is imperative to recognize that the first classroom serves as the primary battleground for knowledge transmission, necessitating the establishment of a suitable system for student development and oversight. This can bolster students' professional literacy and teaching capabilities, enabling educators to cultivate an educational philosophy of "classroom precedes the day." Furthermore, teachers should embrace advanced teaching methodologies such as heuristic, interactive, and flipped approaches to ensure the relevance and engagement of teaching content. On one hand, this fosters active student participation, while on the other hand, it nurtures their interest in learning and innovation aptitude. In the second classroom, emphasis should be placed on cultivating students' comprehensive qualities through the academy, youth league committee, and various student clubs, fostering character and habit development education, and establishing several off-campus practical training bases across science, engineering, medicine, economics, management, literature, and arts, thereby providing students with real-world exposure. This enables students to grasp the practical significance of knowledge. Actively opening up a third classroom for international exchange, encouraging students to partake in learning, internships, and cultural exchanges at world-class universities, research institutions, and enterprises. Leveraging high-quality online education resources such as MOOC and iClass.com as the fourth classroom



empowers students to access resources remotely, enhancing their ability to acquire knowledge and diversifying their learning methodologies.

## 4. Conclusion

In summary, cultivating top-notch innovative talents through the “Four in One” approach is paramount. Reform and innovation must be undertaken from multiple perspectives to ensure that talents can adeptly navigate the evolving landscape. Through the implementation of reformative and innovative measures, universities can furnish students with a superior educational experience, nurturing their innovative abilities and critical thinking. This, in turn, establishes a robust foundation for their future careers and societal contributions.

## Disclosure statement

The author declares no conflict of interest.

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