

Research on the Pathways for Constructing High-Level Talent Teams in Secondary Colleges of Local Application-oriented Undergraduate Universities

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ABSTRACT

This paper systematically analyzes the five major challenges currently faced by secondary colleges in talent team construction--insufficient quantity, structural imbalance, inefficient mechanisms, weak platforms, and inadequate support services. The study proposes a four-dimensional synergistic pathway consisting of institutional empowerment, tiered recruitment and cultivation, diversified evaluation, and ecological optimization. Adhering to the principles of "college autonomy, classified development, application orientation, and ecological priority", this approach aims to achieve deep integration between the talent chain and the industrial chain through precise institutional design and organizational restructuring, thereby providing sustainable talent support for the high-quality development of local application-oriented universities.

KEYWORDS

Application-oriented universities; Secondary colleges; High-level talent; Recruitment, cultivation, utilization, and retention; Industry-education integration

1 Introduction

The Chinese government has explicitly emphasized the need to "accelerate the construction of world-class talent hubs and innovation centers," elevating talent development to a new strategic height at the national level. The 2020 Overall Plan for Deepening the Reform of Education Evaluation in the New Era aims to dismantle the entrenched "five-only" malpractices. The 2023 Key Tasks for Accelerating the Reform of Modern Vocational Education System Construction further highlights the promotion of "two-way flow of talent between schools and enterprises," charting a clear direction for talent team development in local application-oriented universities. Currently, local application-oriented undergraduate institutions account for over 55% of all undergraduate universities in China, bearing the core mission of supplying high-quality application-oriented talent for regional economic and social development. As the primary frontlines for talent cultivation, technological R&D, and social services, secondary colleges should play a central role in the "recruitment, cultivation, utilization, and retention" of high-level talent.

2 The Context and Real-World Drivers of High-Level Talent Team Construction in Secondary Colleges

2.1 Policy Guidance and Deep Institutional Reforms

With the initiative of developing first-rate universities and disciplines entering its second phase, policy priorities have shifted from scale expansion to connotative development and dynamic adjustment, creating differentiated development space for local application-oriented universities. Evaluation reforms aimed at eliminating the "five-only" criteria compel universities to redefine talent standards, where academic papers, professional titles, degrees, awards, and honors are no longer the sole metrics. Contributions in areas such as technology transfer, social services, and applied innovation are now formally recognized. Key indicators include the number of dual-qualified teachers, horizontal research funding, invention patents, solutions to corporate challenges, and commercialization of research outcomes.

2.2 University Transformation and Structural Optimization Needs

The essence of building application-oriented universities lies in transitioning the faculty structure toward application-oriented expertise. Traditional academically oriented faculty teams struggle to align with the precise demands of specialized clusters and industrial chains, particularly in emerging fields such as intelligent manufacturing, next-generation information technology, and biomedicine. There is a significant gap in dual-qualified talent who possess both theoretical knowledge and practical skills. Industry-education integration and the fusion of science and education impose new demands on faculty capabilities, requiring industry experience and the ability to bridge theoretical teaching with enterprise technological needs.

2.3 Regional Competition Intensifies Talent Strategy Deployment

Against the backdrop of regional integration and industrial gradient relocation, local governments have competitively launched "new talent policies" to attract high-level talent with substantial incentives. This "policy arbitrage" phenomenon places universities in non-central cities at a disadvantage due to three major shortcomings: weak salary competitiveness, limited development platforms, and inadequate urban amenities. Secondary colleges must align their talent strategies with regional industrial needs, integrating them into local innovation systems to transition from a paradigm of "attracting talent through remuneration" to one of "attracting talent through industry."

3 Challenges and Bottlenecks in High-Level Talent Team Construction in Secondary Colleges

3.1 Insufficient Quantity and Recruitment Difficulties

Secondary colleges in local application-oriented universities commonly face high student-to-faculty ratios, with many programs falling short of national quality standards for faculty numbers. The proportion of faculty with doctoral degrees remains low; in some local undergraduate institutions, it is below 25%, significantly lagging behind the goals of high-level application-oriented university development. Weak salary competitiveness is a core constraint, making it difficult to counter poaching by enterprises and universities in developed regions. Concurrently, talent attrition is pronounced, with turnover rates for young doctoral graduates in economically underdeveloped areas reaching up to 10% within 3–5 years of employment. Additionally, rigid restrictions on faculty positions and inflexible fiscal allocation mechanisms prevent colleges from offering competitive salaries to urgently needed "industry-type" talent.

3.2 Structural Imbalances and Quality Deficiencies

Age distribution exhibits a "dumbbell-shaped" pattern, with high proportions of junior faculty under 35 and senior faculty over 50, but with a scarcity of dynamic mid-career faculty aged 36–45. There is a structural shortage of application-oriented talent, with "dual-qualified" teachers constituting less than 50% in most colleges. Moreover, certification criteria for such roles are ambiguous, with some faculty holding vocational qualifications but lacking actual industry experience. More critically, high-level talent often demonstrates weak capacity for local engagement. Many recruited talents graduated from academic-oriented institutions, lacking corporate or industrial work experience. This results in R&D efforts that are "detached from reality" and social services that are "superficial," hindering integration into regional innovation ecosystems.

3.3 Inefficient Mechanisms and Misaligned Authority-Responsibility

Evaluation systems disproportionately emphasize academic metrics like research papers and projects, while applied outcomes such as technology transfer, horizontal projects, and social services are undervalued. Faculty engaged in applied research lack sufficient incentives. While secondary colleges bear primary responsibility for talent recruitment, cultivation, and assessment, they lack corresponding resource allocation authority and autonomy in personnel decisions. Authority over salaries and appointments remains under the control of university administrative departments, preventing tailored approaches aligned with disciplinary characteristics and industrial needs.

3.4 Weak Platforms and Lagging Support Services

Research platforms are often low-tier and scarce, with only several provincial/ministerial-level platforms, inadequate for hosting high-level applied projects. Laboratory equipment is outdated, and sharing mechanisms are deficient, resulting in generational gaps compared to the latest industrial technologies. Information resource development lags, with deficiencies in industrial databases, patent intelligence systems, and technology transaction platforms, impeding faculty access to market information. Talent recruitment processes imposed by higher-level authorities are cumbersome and protracted. These hardware and software shortcomings place colleges at a competitive disadvantage in the intense talent market.

4 Pathway Optimization and Recommendations for High-Level Talent Team Construction in Secondary Colleges

4.1 Deepening Governance Reforms to Stimulate Endogenous Motivation

The first pathway to deepen governance reform is to implement "One College, One Policy" and delegate key authorities. Universities should formulate power lists, delegating substantive authority over professional title evaluation, performance-based incentive distribution, and assessment methods to secondary colleges. The university level should retain only record-filing review rather than approval. Colleges should independently establish evaluation standards and performance coefficients based on disciplinary characteristics and industrial demands. For instance, corporate project experience, technological patents, and horizontal funding may serve as core criteria for professional title evaluation, while academic papers are treated as supplementary references. The second one is to establish "College Talent Work Committees". Universities should break the monopoly of academic committees as the sole evaluation bodies by forming diversified talent work committees comprising college leaders, disciplinary leaders, corporate executives, and alumni representatives. These committees would formulate recruitment and cultivation plans, evaluate high-level talent, and assess major applied projects, balancing "academic logic" with "market logic." Involving external stakeholders enhances the societal recognition and industrial relevance of talent evaluations.

4.2 Implementation of Tiered Recruitment and Cultivation to Optimize Talent Structure

Firstly, to implement tiered recruitment, universities can create flexible recruitment positions such as "Industry Professor" employing annual salary for industry leaders. The tasks given to them emphasize applied orientation: delivering cutting-edge industry courses, jointly applying for provincial/ministerial applied projects or invention patents,

facilitating technology transfer or horizontal projects, and mentoring junior faculty in corporate practices. This flexible mechanism featured by "not seeking ownership, but seeking utilization" rapidly addresses shortages in high-end applied talent. Secondly, programs like "Young Applied Scholar" can be encouraged and launched. We should target at outstanding doctoral graduates under 35, prioritizing those with over six months of corporate postdoctoral experience or leadership in corporate horizontal projects, and enhance research start-up funds and provide independent laboratory space, supported by joint mentorship from corporate and academic supervisors. Evaluation focuses on horizontal project funding, authorized invention patents, and guidance of students to win provincial or higher innovation awards. This initiative nurtures compound young talent who "can both publish papers and conduct commercialization," addressing the mid-career gap. Thirdly, we can develop the mechanisms of School-Enterprise Talent Mutual Appointment. On one hand, academic leave for corporate practice is instituted to allow faculty periodic full-time engagement in enterprises, where outcomes may partially substitute teaching workloads. On the other hand, senior corporate technicians may apply for "industry associate professor" positions based on significant technological achievements or extensive engineering experience, without occupying university posts, receiving course fees, project rewards, and access to university public resources. Moreover, we should establish mutual recognition systems for qualifications, outcomes, and compensation to dismantle institutional barriers.

4.3 Innovating Evaluation Mechanisms to Emphasize Applied Contributions

Firstly, the model of Applied Faculty Development Capacity should be constructed. paper-centric metrics is moved beyond to establish a four-dimensional evaluation framework encompassing "teaching innovation, technological R&D, social services, and student entrepreneurship guidance". It incorporates development of industry-education integrated courses, horizontal project funding, invention patent authorization, technology transfer revenue, solutions to corporate technical challenges, and incubation of student startup projects.

Secondly, the evaluation system of Protected Period Assessment plus Long-term Evaluation is adopted. For recruited high-level talent, a protected period is implemented, reducing weight of academic indicators like papers and projects, focusing instead on corporate collaboration depth, technological need alignment, and team integration. post-protection period, transition to long-term evaluation. This dual approach encourages faculty to engage in sustained, in-depth work.

4.4 Optimizing Development Ecology to Build a Full-Cycle Support System

The first step is to establish Interdisciplinary Applied Teams. We should focus on key regional industrial chains (e.g., new energy vehicles, biomedicine, digital economy) to form "discipline + industry" joint laboratories, breaking departmental and disciplinary boundaries. Universities should allocate research space, research operational funds, etc., to each team. And Principal Investigator (PI) responsibility systems with members from diverse departments and enterprises is implemented, adopting the management models of goal-oriented, dynamic entry-exit, outcome-sharing, centered around major applied projects. The next step is to implement "One-Stop" full-cycle services. Universities Should assign dedicated "talent service specialists" to provide end-to-end support from onboarding to departure: assisting with settlement allowances and research start-up funds pre-entry; handling household registration, children's schooling , spouse employment, and social security transfers during onboarding; conducting regular post-entry visits to address housing maintenance, medical green channels, legal consultation, etc.

5 Conclusion

Constructing high-level talent teams in secondary colleges of local application-oriented undergraduate universities is a systematic endeavor. It must adhere to the fundamental principles of "college autonomy, classified development, application orientation, and ecological priority". Through tiered recruitment and cultivation, the ternary structure of "academic-applied-industrial" talent can be optimized, achieving deep integration between talent teams and regional industrial chains. Only through continuous reform and targeted strategies can regional industrial talent hubs be established, providing robust talent and intellectual support for high-quality local economic development.

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