

# Study of the Mechanism and Countermeasures for the Supply-Demand Coupling of Rural Planning Talent in Local Higher Education Institutions

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**Abstract:** The implementation of the national rural revitalization strategy has triggered an urgent demand for the training of rural planning talent at different levels. With local higher education institutions supplying talent for regional rural revitalization as a research object, based on the two major systems of professional talent training and regional rural development, this paper interpreted the new connotations of the supply-demand coupling of rural planning talent from the three perspectives of relationship, intensity and quality, analyzed the coupling mechanism on the basis of matching logic, local logic and flexible logic, and thus put forward countermeasures for coordinated supply-demand coupling of rural planning talent in local higher education institutions in the three aspects of structural, local and flexible adaptation. The study deepens the academic and theoretical research on talent supply and demand and professional talent training in local higher education institutions and provides important intellectual support for the formulation of relevant optimization and regulation policies by local governments and higher education institutions.

**Keywords:** Rural Planning Talent; Supply-demand Coupling; Mechanism; Local Higher Education Institution.

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## 1. Introduction

The implementation of the national rural revitalization strategy has brought unprecedented opportunities for the development of rural areas and triggered an urgent demand for the training of rural planning talent at different levels. As a major supplier of talent for local rural revitalization, local higher education institutions (undergraduate colleges and universities) are faced with an interdisciplinary and comprehensive key topic related to the proposition of “the supply-side reform of higher education” in the fields of research on higher education and urban and rural planning in the new era, which is how to improve their ability to adaptively supply high-caliber professionals in rural planning, and gradually resolve the structural contradiction between the supply and demand of rural planning talent.

As the train of thought for the national urban and rural development strategy has changed significantly, the discipline of higher education attaches increasingly greater emphasis on the combination of applied research and basic theoretical research, focusing on actively promoting interdisciplinary and cross-field dialogue, and enhancing innovative capacity in interdisciplinary fields [1]. At this time, the study of the supply-demand coupling of rural planning talent in local higher education institutions seems to be aimed at the supply of high-caliber professionals in rural planning in response to demand under the implementation of the rural revitalization strategy, but actually focuses on the local systematic integration of the universality of higher education and the particularity of professional education on urban and rural planning.

The study focuses on the two systems of professional talent training and regional rural development involved in the supply-demand coupling of rural planning talent in local higher education institutions in the context of rural revitalization, analyzes the connotations of their coupling,

and explores its mechanism, to provide a clear direction and a target domain for the systematic and sustainable enhancement of the “adaptive” supply capacity of talent in local higher education institutions through qualitative analysis in terms of academic and theoretical research.

## 2. Literature References

### 2.1. Theoretical Basis

Talent supply and demand in higher education institutions and its effective coupling are made the research scope of this paper on the theoretical basis of the contemporary intellectual enquiries and basic consensus about the “adaptation theory” of higher education. From the contemporary intellectual debate on the “adaptation theory” of higher education (the major proposition of whether higher education should adapt to socio-economic development) in the academic circle of higher education since 2013, despite the divergence of views, we can see that all the scholars generally agree with the argument basis for the system theory that “the interaction between a system and its external environment is formed through the exchange of matter, energy and information, and there are different types of coupling relationships among various subsystems within the system”, which the “adaptation theory” of higher education is based on; moreover, they have mainly carried out contemporary reconstruction of the connotations of “adaptation” in the “adaptation theory”. To be specific, higher education should interact actively and even be coupled with its external environment rather than simply adapt to it passively, based on our reviewing, adhering to and critiquing “values and standards” of the higher education system, as well as emphasizing that higher education is delivered in accordance with the logic and law of cultivating humanity[2-3].

Talent supply and demand in higher education institutions is a key chain of interconnection and interaction between

higher education subsystems and the social system and its related subsystems, which involves the major scientific issue of how higher education can actively and dynamically adapt to and lead (i.e., effective coupling) socioeconomic and cultural development in the core area of talent training[4-5]. Therefore, talent supply and demand in higher education institutions and its effective coupling as a research scope is theoretically supported by the “adaptation theory” of higher education based on the system theory.

## 2.2. A Focus on the Supply and Demand of Rural Planning Talent in Higher Education Institutions

On the whole, the *Urban and Rural Planning Law* incorporated village planning in the urban and rural planning system in 2008; the rural revitalization strategy was implemented and the training of rural planning talent was required to be strengthened in 2018. Over the decade, scholars mainly from leading higher education institutions were highly focused on studying the training of rural planning talent and the adjustment of its mode with the development of urban and rural planning disciplines and changing demands for professional talent. These studies can be divided into two levels: First, they studied urban and rural planning education as a whole. For example, S.W.Sun [6] and L.Hou[7] pointed out the necessity and urgency of the transformation of urban and rural planning education in China, and studied how to cultivate the professionalism of urban and rural planning talent in the new period as well as how planning education should cope and transform in terms of the planning teaching system, the main types of courses, etc. Second, they pondered over the lack of rural planning talent. For instance, S.W.Zhang et al.[8], Z.Q.Wu, M.Zhao etc.[9] put forward that rural planning education in higher education institutions should focus on strengthening the content involving rural epistemology and planning methodology to meet the needs of rural planning and construction, and conduct an exploration of exemplary significance in the aspects of strengthening multidisciplinary cooperation, constructing a knowledge system and a new mode of rural planning education with Chinese characteristics.

In recent years, some higher education institutions have mostly discussed the methods, modes, paths and other topics of training rural planning talent in terms of teaching reform [10-11] and curriculum reform[12]. In general, however, most local higher education institutions fail to give a systematic, positive and effective response in the aspects of concepts, modes, educational and teaching systems, etc. for talent training, in the face of demands for training rural planning talent in the new period, with scarce relevant academic and theoretical studies, which can neither effectively guide the reform of professional talent training in practice, nor satisfy the targeted demand for professional talent in the implementation of the rural revitalization strategy.

## 3. Connotative Interpretation of the Supply-demand Coupling of Talent and Analysis of Its Mechanism

### 3.1. Connotative Deconstruction and Reconstruction of the Supply-demand Coupling of Talent

#### 3.1.1. The Supply-Demand “Coupling” of Talent

In different domains, the connotations of relation are not exactly the same. From the four perspectives of direction of action, form of relation, degree of relevance and types of relation, the supply-demand coupling of rural planning talent in local higher education institutions in the context of rural revitalization is essentially a coupling relation with a strong directionality between the two independent and complete systems of professional talent training and regional rural development, which are not completely related in two-way interaction and reciprocal causation and can be interpreted in the social relation system (Figure 1). On the one hand, this relation is reflected in that local higher education institutions push forward rural revitalization and development and the dynamic improvement of effectiveness in regional high-quality development by training rural planning talent; on the other hand, the regional rural development plays a dual role in promoting and restraining the reform of the local undergraduate professional talent training system by providing job opportunities, etc., which is embodied in optimizing professional talent training plans and presenting innovative models and methods within the capacity of employment, but controlling excessive education and reform.

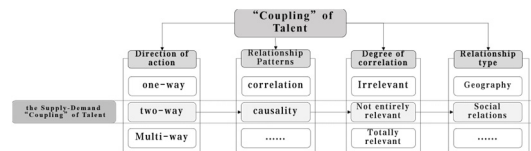


Figure 1. Diagram of the Supply-Demand “Coupling” of Talent

#### 3.1.2. The Strength of Supply-Demand Coupling of Talent

The strength of coupling between supply and demand of rural planning talent in local higher education institutions is measured by the coupling degree of the two systems of professional talent training and demand for regional rural development, and the value of its indicator ranges between 0 and 1. According to changes in the value, the strength of coupling is described as non-coupling (the indicator value is close to 0), close coupling (the indicator value is close to 1), and loose coupling (the indicator value is between 0.3 and 0.5). Differences in coupling strength also reflect different coupling states and problems between the two systems (Figure 2). From research made by X.Xu[4], G.L.Zhou [13] and other scholars, it can be inferred that the supply-demand coupling of rural planning talent in Chinese local higher education institutions is still in the stage of loose coupling in the period of social transformation. At the moment, on the basis of preserving the high-quality development within the two systems, we should promote the interaction and matching of coupling elements between the systems, and promote the coordinated and concomitant development of the two systems.

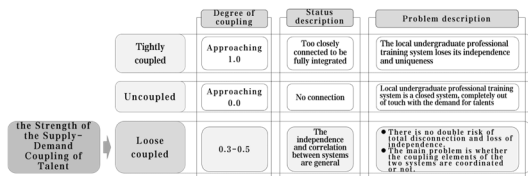


Figure 2. Diagram of the Strength of the Supply-Demand Coupling of Talent

### 3.1.3. The Quality of Supply-Demand Coupling of Talent

In the context of rural revitalization, the supply-demand coupling of rural planning talent in local higher education institutions expresses a coordinated relationship in pursuit of high quality, and represents sound mutual promotion between system elements and their systems. In terms of development stages, the coupling will go through an evolutionary process in three stages, namely the formation of low-level coupling, high-level system coupling and the formation and action of a high-quality coupling system (Figure 3). When the coupling system is formed and comes into play, the quality of the supply-demand coupling of rural planning talent in local higher education institutions can reach the most high-quality and stable state, when the overall function of the system can be truly strengthened and its overall effectiveness can be truly amplified.

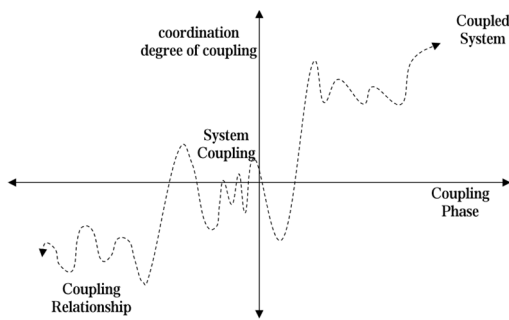


Figure 3. Diagram of the Quality of the Supply-Demand Coupling of Talent

## 3.2. Analysis of Mechanisms for the Supply-demand Coupling of Talent

### 3.2.1. Matching Logic: Alignment of Attributes in Talent Supply and Demand

In the context of rural revitalization, the supply and demand of rural planning talent in local higher education institutions follows the logic of coupling and generation with matching as the core. On the one hand, its logic is reflected in the horizontal matching of supply and demand in terms of the structure, quantity, quality, and standards of rural planning talent; on the other hand, it is shown in the vertical chronological evolution of the matching relationship between supply and demand.

At present, the training of rural planning talent is mostly provided by higher education institutions that originally offered urban planning programs (changed into urban and rural planning in 2011). The development of the discipline provides an opportunity to broaden the field of talent training. However, compared with traditional urban planning, rural planning is characterized by more significant regional differences, social participation and community renewal, and its knowledge system, way of organization, working methods and process of implementation are not exactly the same, which have posed new challenges to the education system and talent training mode of urban and rural planning. Local higher education institutions are faced with some major issues in the

adaptive supply of rural planning talent, namely how to build and improve the knowledge and method system of rural planning education, promote the closer integration of rural planning teaching and practice, strengthen interdisciplinary cooperation, and better cultivate talent at different levels to meet actual demands. Research on the effective methodology of higher education has always been based on problems with logical precedence over methodological research, which is believed to be of greater instrumental significance and show higher value of existence when applied to the right problem; meanwhile, emphasis is also laid on verifying the limitation and effectiveness of methodology in the settlement of the problem. Therefore, when we encounter realistic dilemmas at both the supply and demand sides of rural planning talent, it is reasonable to seek new ideas for the extension of research on the effectiveness of higher education methodology from matching logic. This can provide an effective methodology for the supply-side reform of higher education in the practice of professional talent training based on supply-demand coupling, and for the improvement of the ability of local higher education institutions to supply rural planning talent adaptively.

### 3.2.2. Local Logic: Spatial Congruence Between Talent Supply and Demand

On the one hand, local higher education institutions shoulder the important responsibility of providing talent training for local socioeconomic development, and their structure of student sources and locations of employment reflect certain geographic characteristics. Meanwhile, local higher education institutions mostly prefer carrying out teaching practices in local places. On the other hand, rural revitalization also differs obviously due to many factors such as natural endowments, historical evolution, local culture, thinking and notions, economic and social structures, and implementation of policies, and the demand for rural planning talent inevitably shows a certain local preference. Therefore, in the context of rural revitalization, the local spatial preference shown in the supply and demand of rural planning talent in higher education institutions makes the regional space instinctively become an important spatial realm, where local higher education institutions guide students in discovering, analyzing, and solving the real problems faced by rural areas in their teaching practice, perceiving the important value of the countryside and carrying out the practice of rural planning and design. In this spatial realm, the supply and demand of rural planning talent in local higher education institutions will inevitably follow the basic law of regional rural development and evolution, as well as the evolutionary law of the coupled system.

### 3.2.3. Flexible Logic: The Difference and Inter-construction of Talent Supply and Demand

The flexibility of dynamic correlation will inevitably appear in the coupling and coordination process in the two independent and complete systems of professional talent training and regional rural development involved in the supply and demand of rural planning talent in local higher education institutions. On the one hand, as mentioned above, the training of rural planning talent in China relies on the discipline of urban and rural planning, which has experienced several major changes in its development, with its educational focus from “urban physical spatial entities” to “urban and rural socioeconomic development”, and from “spatial visual aesthetics and engineering technology” to “integration and coordination of regional and urban socioeconomic and

physical spaces”. Thus, the deep changes in both the connotation and extension of the discipline have resulted in dramatic changes in standards and requirements for talent training, which is the self-optimization and reconstruction of the professional talent training system. On the other hand, the diversified development of regional rural society, economy and culture has already seen a complex and changeable dynamic trajectory, and is experiencing unprecedented structural changes as it is driven vigorously by a series of development strategies such as national rural revitalization, urban-rural integration and new urbanization. Like two gears running according to their own development laws and requirements, the two systems of professional talent training and regional rural development involved in the supply and demand of rural planning talent in local higher education institutions are obviously related to each other, but quite different in the speed, stage and characteristics of development, both of which are pursuing the flexible coordination of each other in their own dynamic development in the hope of finding a flexible coupling relation with tenacity in the cyclic evolution.

## **4. Countermeasures and Practice for the Supply-demand Coupling of Rural Planning Talent in Local Higher Education Institutions**

### **4.1. Constructing a Regional Diversified Rural Planning Talent Supply System to Enhance the Structural Adaptation of Supply and Demand**

The rural areas of China are experiencing unprecedented changes in the development pattern and the living environment. In 2021, *Opinions on Accelerating the Revitalization of Talent in Rural Areas* put forward the requirement of strengthening rural planning and talent training. It supports planning talent familiar with the countryside, including chief planners, village or rural planning designers and teams, to enter and be stationed in rural areas, where they mainly work on planning and design, environmental remediation and style guidance, and participate in the construction of dwellings and public spaces in villages or districts composed of several villages. From this requirement, it can be seen that local higher education institutions, which offer urban and rural planning and play a key role in training rural planning talent, should be clear about the characteristics of their own professional talent training and regional positioning, as well as can establish a clearly hierarchical and diverse system for the supply of rural planning talent, including professional talent, senior professional talent, senior composite talent, interdisciplinary (senior) professional talent, etc. by local higher education institutions in the province under the guidance of the provincial planning societies, to settle the regional crisis of matching supply and demand by optimizing and improving the hierarchical structure.

### **4.2. Promoting the Reform of Professional Education and Teaching to Strengthen the Local Adaptation of Talent Supply and Demand**

As a major part in the training of rural planning talent, traditional contents and methods are far from enough to cover the connotations of modern urban and rural planning, and unable to sufficiently meet the needs of socioeconomic development in rural areas, due to their emphasis on “urban areas”, “technology” and “built environment” but neglect of “rural areas”, “comprehensive analysis” and “natural resources”. Therefore, it is urgent to fully transform and reform the training of rural planning talent in local higher education institutions, and targeted optimization and adjustment should be considered in the aspects of professional training objectives, training standards, teaching contents, teaching methods, curricular systems, education infrastructure, etc. to enhance the degree of coupling between professional talent training and the needs of social development. Some higher education institutions add the teaching contents of “theory - cognitive research - design and practice” in rural planning and design to the original curricular system of the urban and rural planning talent training program, form a “community of the government, industries, higher education institutions and research institutes” for rural planning and design in the organization of teaching, arrange real rural design projects, and invite villagers and village cadres, chief engineers of design firms, off-campus experts or leaders of planning departments to participate in the evaluation of drawings, and organize special lectures from experts in the industry; moreover, they also guide students in getting closer to the needs of villages, learning from villages and supporting rural revitalization with the logic of rural areas rather than urban areas through design seminars, practice, reports and other procedures. Such a model of teaching deepens the reform of education and teaching, improves the degree of coupling between professional talent training and its targeted demand, and effectively responds to the call of the national strategy and the needs of local development.

### **4.3. Promoting Interdisciplinary Integration and Improving the Flexible Adaptation of Talent Supply and Demand**

Nowadays, undergraduate education stresses that teachers and students carry out research-based collaborative learning, to train talent who can use their knowledge to solve complex problems. The training of rural planning talent itself has a strong demand for interdisciplinary education, which needs not only the support of the three main disciplines related to the living environment (architecture, urban and rural planning, and landscape architecture), but also the assistance of multiple other disciplines, including agronomy, civil engineering, geography, art, economics, sociology, management, etc. Currently, rural areas are in urgent need of cross-sectoral and interdisciplinary cooperation to provide a model of “local, packaged, participatory, whole-process” rural planning design, consultation and service. By breaking the boundaries of disciplines and courses, the reform of the education system and the training model for rural planning talent should continuously explore the transformation of the teaching model from “teaching of courses” in a single discipline to “teaching of special topics” across disciplines,

build and improve a knowledge and methodology system for education on urban and rural planning, train interdisciplinary professional talent, so as to enhance the flexible adaptation to demand for rural planning talent in local higher education institutions in the difference and inter-construction and dynamic coupling of the two systems of professional talent training and regional rural development.

## 5. Conclusion

To sum up, scholars in the fields of higher education and rural and urban planning have paid attention to the issue of professional talent supply by higher education institutions from macro and micro perspectives in their own disciplines, with abundant findings. However, we also found a severe shortage of theoretical research and practical exploration in response to a series of changes in demand for talent caused by the major changes in the urban and rural development strategy of China in higher education institutions, especially local ones, as a major force at the supply side of rural planning talent. Hence, this became the starting point and a major topic of the study. This study reflected on the effectiveness of higher education from the dual perspective of supply and demand, started with interpreting the connotations of the coupling between talent training and regional development, deeply analyzed the coupling mechanism that includes matching logic, local logic and flexible logic, and developed a new way of thinking for research on the effectiveness of higher education methodology in the field of urban and rural planning. Moreover, on this basis, countermeasures for the supply-demand coupling of rural planning talent in local higher education institutions in the three aspects of structural, local and flexible adaptation to the supply and demand of rural planning talent. To some extent, these qualitative analyses have deepened the academic and theoretical research on the supply and demand of talent and professional talent training in local higher education institutions, and provided important intellectual support for the formulation of relevant optimization and regulation policies in local areas.

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