

Received: October 20, 2017

Revision received: July 3, 2018

Accepted: July 6, 2018

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DOI 10.12738/estp.2018.6.161 • December 2018 • 18(6) • 3329-3336

Research Article

Construction and Teaching Practice of Inter-regional, Inter-school and Inter-disciplinary Research Institutions in the Context of the Belt and Road

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Abstract

The Belt and Road is a brand-new exploration of economic model in China. It is devoted to building a comprehensive community of political, economic and cultural integration by countries along the Belt and Road. Under the new model, the training of required interdisciplinary and comprehensive talents will be an important foundation to promote its development. This paper analyzes the construction purpose, significance and concrete contents of the inter-regional, inter-school and inter-disciplinary research institutions in the context of the Belt and Road, and probes into the specific conditions of the existing teaching practice. On the basis of a thorough understanding of the existing practice, an exploratory scheme is provided for the development of interdisciplinary research institutions, with integration into the teaching practice. The experimental results show that the exploration scheme can effectively improve the comprehensive satisfaction of training inter-disciplinary talents. The research results of this paper have important guiding significance to the construction direction and teaching model of inter-regional and inter-disciplinary of the future research institutions in countries along the Belt and Road.

Keywords

The Belt and Road • Regional Culture • Inter-Disciplinary Construction • Teaching Practice

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The Belt and Road is a brand-new strategic conception put forward in the new situation of economic development, the essential logic of China's all-round opening-up, and the inevitable trend of civilization revival and the necessary requirement of globalization (Ferdinand, 2016). The Belt and Road program runs through the Eurasian continent, including about 65 countries and regions. The development and present situation of each country and region are quite different. Besides the intercommunication and exchange in economic aspect, the political and cultural aspects will also be deeply integrated. Therefore, it is an important basis for ensuring and promoting the development of the Belt and Road to cultivate inter-regional and inter-disciplinary comprehensive talents (Kaczmarek & Marcin, 2017).

Key tasks for the joint construction of the Belt and Road include policy, infrastructure, trade, financial and culture connectivity (Xingang, Wentao & Yulong, 2017). Based on these tasks, this paper summarizes the objectives of training inter-disciplinary talents, focusing on the following four aspects (Szunomár, 2018): (1) cross-cultural research and talent training; (2) inter-regional political and legal research and talent training; (3) inter-domain international trade (finance) research and talent training; (4) interdisciplinary infrastructure construction research and talent training. At present, some teaching practices have been carried out in relevant fields, such as the inter-disciplinary teaching of Russian with the culture, economy and law of the countries along the Belt and Road, the interdisciplinary teaching of minor languages with engineering and infrastructure construction, and inter-disciplinary teaching of the subject of Chinese medicine and business promotion (Lee, Zhao & Hassna, 2016). In addition to the above-mentioned teaching practice, several universities and institutions in China have set up multi-disciplinary think tank complexes, key research bases of humanities and social sciences, which covers more than ten national level-1 disciplines such as law, political science, sociology, theoretical economics and so on. In the five years since the conception of the Belt and Road was proposed, although there have been some attempts at the construction and teaching practice of inter-regional, inter-school and inter-disciplinary research institutions (Crow, & Pounder, 2000), it is still in the initial stage of development, and the construction and teaching models still need to be deeply studied and discussed.

On the basis of existing research and practice, this paper re-examines the purpose and significance of inter-regional, inter-school and inter-disciplinary research institution construction in the second part, and analyzes the specific research contents. It tries to put forward an exploratory plan to its construction modes and teaching practice in the third part, carries on the experiment of integrating the exploratory plan and teaching practice, investigate the situation of inter-disciplinary talent training and give the experimental conclusions in the fourth part and summarizes the full text in the fifth part.

Analysis on the Construction of Inter-regional, Inter-school and Inter-disciplinary Research Institutions

Construction purpose

The purpose of the original inter-disciplinary research is to carry out the integrated research through the researches by disciplines and subjects (Woods, 2007). Under the background of the Belt and Road planning, because of the large geographical span and obvious cultural differences among different countries, regions and

ethnic groups, some complicated political and religious issues still exist in some areas. (Nikitina & Svetlana, 2006). Therefore, the traditional inter-disciplinary research model cannot meet the needs of the existing environment, and it is necessary to purposefully establish inter-regional, inter-school and inter-disciplinary research institutions to integrate the scientific research and educational resources of various countries and regions on the basis of in-depth understanding of the regional characteristics, strengthen the research on the integration of politics, economy and culture in the countries along the road, and train the multi-disciplinary and comprehensive talents suitable for promoting the development of the plan.

Construction significance

The main significance of constructing inter-regional, inter-school and inter-disciplinary research institutions lies in:

Inter-regional cultural integration: The establishment of inter-regional institutions can objectively promote the exchange of multi-regional talents on the basis of language communication and coordination, and strengthen the comprehensive understanding of talents about the political, economic and cultural relations in cooperative countries and regions along the Belt and Road;

Inter-school education resources integration: To break the inter-school education barriers, talents can obtain the advantageous specialties, high-quality courses, and excellent teacher resources of different regions and schools, and promote the multilateral certification mechanism of academic degrees, and inter-school research institutions can effectively allocate the educational resources of countries along the Belt and Road;

Optimization of inter-disciplinary training strategies: Due to the unique complexity in the planning and construction of the Belt and Road, the construction of inter-disciplinary research institutions can be based on the specific application to optimize and formulate inter-disciplinary training strategies on the basis of comprehensive practice and meet the needs of talents in a customized way.

Analysis of the specific content of the construction

In the context of the Belt and Road, the main content of building inter-regional, inter-school and inter-disciplinary research institutions should include at least the following three levels:

The allocation and rational utilization of educational resources include teachers, curriculum resources and literature resources. The effective and reasonable allocation of resources is the foundation of institutions. It usually needs to be guided by policy to promote the joint participation of all countries and regions along the line;

In the context of the Belt and Road, the two-way adaptation between institutions and market enables institutions to understand the market demand, which is the basis for setting up scientific research and teaching plan and provides the market with qualified talents in accordance with demand. The two-way adaptation mechanism can have positive influence on institutions and the market respectively;

The establishment of training objectives and the setting of specialties and curriculum system The establishment of training objectives is based on the above-mentioned two-way adaptation mechanism, the disciplines and inter-disciplines are established and the corresponding specialties and curriculum system are set up according to the actual application, to achieve the systematic and process training of comprehensive and complex talents.

Scheme Exploration

On the basis of analyzing the inter-regional, inter-school and inter-disciplinary research institutions, this paper further discusses the construction schemes of specialty setting and adjustment, training objectives, curriculum system, resource allocation, management mode and so on.

Specialty setting and training objectives Specialty setting must be adapted to the planning and development of the Belt and Road, which provides policy support for relevant research institutions and education, which in turn need to support development. The specialty setting should include two types: basic research and others (Miller, 1998), among which the basic research involves the basic research of disciplines related to the Belt and Road, with a focus on the in-depth and continuous exploration in relevant fields, the main goal is to promote the development of related areas, or to provide a deeper professional theory and talent guarantee for other specialties. Other specialties are set as required by the planning. The specialty structure is adjusted as required. The specific specialty settings can be based on the existing specialty settings, but need to be distinguished from the existing specialties in the curriculum system. The main objective is to train relevant industry talents in line with the planning requirements.

At present, the Belt and Road planning projects mainly focus on the construction of six areas and five types of projects, including infrastructure construction, industry, industrial parks, humanities and international and border cooperation. The specialty setting relies on the existing specialty framework in various fields and combines the market demand of the planning. The capital construction category may include traffic specialty and civil engineering specialty, industrial and industrial park category may include mechanical category specialty and electronic category specialty, and humanities category may include humanities specialty and philosophy specialty, international and border cooperation category may include foreign trade specialty. The institutions may be added or removed flexibly according to the needs of the planning and project development.

Curriculum system establishment Under the background of the Belt and Road, there are distinct characteristics in the discipline and curriculum system of the inter-regional, inter-school and inter-disciplinary research institutions. In addition to the major disciplines of relevant specialties, it's necessary to include the side disciplines with regional and cultural characteristics, and form a major discipline with many secondary disciplines, multi-disciplinary coordinated and systematic discipline system (Gunn & King, 2003). The major disciplines are required courses for relevant specialties, including at least the basic courses and professional skills courses. It is necessary to set up a comprehensive optional system which includes such disciplines as language and culture, business and law. It is essential to exert the autonomy and flexibility of talents in talents training, so that the optional courses can be selected according to their interests and hobbies. On the premise of

meeting the individual needs of talents, we should cultivate diversified and comprehensive talents. Besides the major disciplines and the sideline subjects, the construction of the curriculum system should also include the comprehensive practice content, establishing social practice related to the project engineering, and strengthening the social integration ability and the work ability of the talents.

Resource allocation and management The Belt and Road planning covers about 65 countries in Asia, Europe and Africa, and the resources of each country and each institution can be exchanged and used for reference to some extent under the cooperation of the national level. Inter-regional and inter-school cooperation requires flexible and rational use of these resources, and due to the limitations of space, resource utilization should establish a collaborative mechanism of offline intercommunication and on-line sharing and coexistence.

The off-line intercommunication of resources promotes the sharing of teachers' resources and hardware resources among different regions along the line. On the basis of providing life guarantee for excellent teachers of various specialties, it is possible to set up circular teaching among institutions along the line and make full use of their time resources. At the same time, we should make flexible use of the hardware resources such as laboratory and experiment equipment of each institution, and the students in relevant specialties can make reasonable use of the resources among the institutions across the region and across the schools within the framework of their discipline system.

The online sharing of resources shall establish online teaching system, and various regional institutions shall collect and improve various data, and gradually computerize the information and teaching situation, so as to provide the original material support for the inter-region and inter-school research on the premise of the off-site certification and authorization, providing online courseware and teaching system for talent training, and online resource sharing can greatly improve the efficiency of research and learning, and is an important component of inter-regional, inter-school and inter-disciplinary research institutions.

Based on the above scheme, the multi-level and multi-module integrated teaching system model with 3 levels, 3 modulars and 2 platforms should be established in the inter-regional, inter-school and inter-disciplinary research institutions under the background of the Belt and Road, as shown in Figure 1 below.

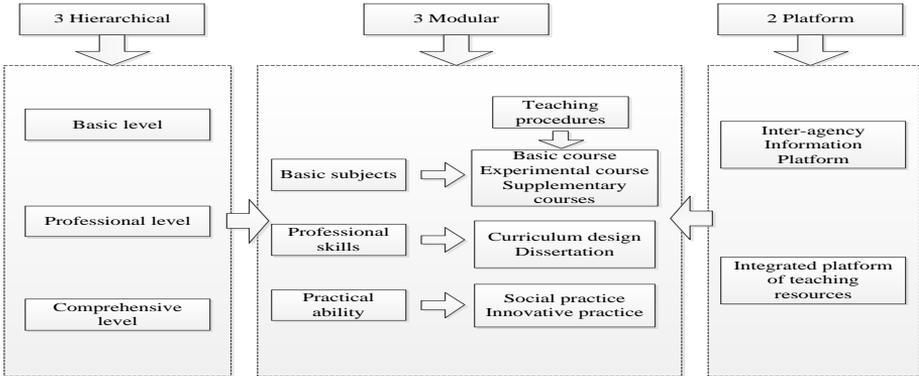


Figure 1. Model structure diagram.

An Example of the Combination of Exploratory Scheme and Teaching Practice

This paper carries on the experiment of combining teaching practice with the above-mentioned scheme, and selects 10 students for the comprehensive training in the context of the Belt and Road. These 10 students major in the civil engineering, transportation, communication and so on respectively. In a half-year period, a new training plan is formulated for these 10 students, with side line disciplines added to their main disciplines according to their original specialty characteristics, and the students are trained in combination with the mobilization of available schedulable resources. Finally, experts are invited to observe the comprehensive satisfaction of the talents.

Development of training objectives: Have good scientific literacy, solid mathematics, natural science, engineering foundation and professional knowledge; Develop the ability to engage in relevant disciplines and to solve complex engineering problems; Cultivate the ability of inter-regional communication and cooperation; Cultivate the ability to continuously learn and expand knowledge, with innovative consciousness and application innovation ability.

Curriculum system constitution: The main disciplines consist of main specialties and remain unchanged; more than 20 courses such as languages (Russian, Arabic, etc.), business, law and humanities are added in terms of sideline disciplines. Students are required to study these courses selectively.

Talent satisfaction evaluation: Under the above-mentioned training objectives and curriculum system framework, 10 students study for half a year and carry out relevant project practice, and the enterprise side and the talent side evaluate knowledge base, adaptability, communication skills, working ability, and innovation ability respectively. Meanwhile, the enterprise side provides the evaluation results of the existing talents who have not been trained according to the Belt and Road training objectives. The average value of comprehensive evaluation is shown in Table 1 below.

Table 1
Enterprise and Talent Satisfaction Evaluation Form

	Enterprise side	Enterprise side (Regular talents)	Talent side	Talent side (Regular talents)
Knowledge base	9.1	9.1	9.0	8.9
Adaptability	9.3	8.2	8.9	8.2
Communication skills	9.2	8.5	8.7	8.3
Working ability	9.0	8.7	8.7	8.5
Innovation ability	8.5	8.5	8.5	8.5
Total	45.1	43	43.8	42.4

The results show that the talents trained by the exploratory scheme are basically equal to other talents in knowledge base and innovation ability, but have obvious advantages in adaptability, communication ability and working ability. After the comprehensive evaluation, the enterprise side has a high degree of recognition for the talents trained by the exploratory scheme, and the talent side also shows a high degree of integration of itself and the enterprise into the relevant engineering practice related to the Belt and Road, with a higher recognition of the cultivation results than the previous training mode, and much better comprehensive satisfaction of the talents training.

Conclusion

Based on an in-depth understanding of the complex environment faced by the Belt and Road planning, this paper analyzes the purpose, significance and specific contents of building inter-regional, inter-school and inter-disciplinary research institutions, and exploratorily puts forward the scheme and method applicable to the construction of such institutions and teaching practice. After the evaluation on the experiment of integrating the scheme and the teaching practice, the comprehensive satisfaction degree of the talent training has been effectively promoted, which has important guiding significance for the future construction of institutions and disciplines. However, with the unceasing advancement of the Belt and Road planning process, its discipline composition and inter-disciplinary construction will be more complicated and diversified. Therefore, the future development and space of this subject will also expand constantly, and it still needs to be studied continuously and deeply.

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