Practice and Innovation of the Construction of Special Geotechnical Application Technology Collaborative Innovation Center in Higher Vocational Colleges

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ABSTRACT

On the basis of practice, the innovation of collaborative innovation center is carried out in five directions. The research on the innovation of institutional mechanism is conducive to the establishment of the model of cooperation and innovation cooperation between the government colleges and universities of countries along the belt and road under the background of "silk road economic belt". The innovative research on the construction of talent team explores the new mode of the construction of practical and scientific research talents in higher vocational colleges. Collaborative innovation way of study, the use of economic belt "silk road" of the opportunity, in scientific research and innovation, promote innovation and service innovation of social model, based on the countries along the expanding innovation achievement to Xinxiang, boost the construction of economic zone "silk road".1

KEYWORDS

Collaborative; innovation; practice; application technology

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INTRODUCTION

Collaborative innovation is another innovative mode behind integrated innovation, original innovation and digestive absorption in China. As the research hotspot, collaborative innovation in higher education field is more than the new paradigm of scientific innovation. In addition to scientific research, it is the higher education governance paradigm that constructs the in-depth cooperation between colleges, industrial enterprises, industrial institutes, local governments and international innovative powers, constructs the collaborative mechanisms, shares high-quality resources, realizes synchronous improvement on scientific study, talent cultivation, social services and cultural inheritance, and promotes the effective interaction between technology, education, culture and economy.

The collaborative innovation in higher vocational colleges means that a group of innovative subjects driven by innovative interests and intention and led by higher vocational colleges construct the strategic alliance, realize complementary advantages, and promote sharing of innovative resources in talents, information, capital technology through innovative elements and effective convergence, so as to gain the substantial achievements in the key field.

THE SIGNIFICANCE OF THE CENTER CONSTRUCTION

In November 2015, in order to run through the Decision of the State Council on Facilitating the Development of Modern Vocational Education and promote the innovative development of higher vocational education, the Ministry of Education issued the Action Plan of Innovation Development for higher vocational education (2015-2018). The assignment book definitely points out that in the end of 2018, oriented by the market, 500 applied collaborative innovative centers are constructed in the whole country. Under the overall background of national industrial upgrading and transformation, higher vocational colleges promote university-enterprise collaborative innovation, promote university-industry cooperation and industry-education integration and enhance vocational education services to construct the applied collaborative innovative centers.

The construction of the “Silk Road Economic Belt” promotes the interconnection including infrastructures between regions. It is good for regional cooperative level. Xinjiang and Central Asia belong to arid and semi-arid areas. Special rock in the areas has the prominent characteristics, wide distribution and similarity. It is necessary to take full advantage of recent achievements in Xinjiang special rock study, keep a foothold in Xinjiang, face to Central Asian countries along “the Silk Road”, construct the applied collaborative innovative center for special rock and serve for infrastructure construction between areas.

Higher vocational education is faced up to the whole society and cultivates high-level professional talents in the society. Relative to technicality in common colleges, higher vocational colleges have the stronger professionalism, directionality and
practicableness, so they have the higher requirements for teachers. Integrality, interaction and diversity of collaborative innovation enable the innovative effects to inject fresh blood and power for teachers. The necessity is reflected in the following aspects:

1. Inexorable trend in the reform of higher vocational college. Collaborative innovation overturns the single teacher cultivation mode of traditional training subjects and it is more diversified, thus higher vocational colleges can look for support and sharing of educational resources from the government, social organizations and scientific research institutions in the teacher team construction process. This is good for improving construction efficiency of teachers.

2. Need of constructing high-quality teachers. As constructing teachers in higher vocational colleges, collaborative innovation can fully mobilize different educational resources in each level, consider each process in the team construction, reach the unification in construction philosophy, targets, contents and methods, and maximize the construction effect of teachers.

3. Important conditions of improving school-running quality in higher vocational colleges. Collaborative innovation shows a new development direction and target for teacher construction in higher vocational colleges. This not only considers the basic property of higher education, but also considers the development law of higher vocational colleges. The constructive subjects formed under numerous factors enable the team construction in higher vocational colleges to be supported in all directions.

PRACTICE OF CENTER CONSTRUCTION

Applied collaborative innovative center for special rock is based on features of each collaborative unit in subject construction, talent cultivation, scientific study, achievement transformation and industrialization to ally between giants, complement each other and form the definite division. The collaborative units of the center include the research, production and talent cultivation units.

The Idea of Collaborative Innovation and Target System

The applied collaborative innovative center for special rock conducts the comprehensive technical collaborative innovation by aiming at existing problems in special arid desert regions, high-altitude cold areas and loess areas in the Xinjiang region. By cooperating with Xinjiang traffic scientific institute and Xinjiang traffic prospective design institute, it aims to solve the technical engineering problems in reconnaissance, design, construction, slope protection and highway distress in special rock highway engineering. At present, the technical problems in special rock highway engineering have been solved and applied, but many key technologies should be solved. Particularly, the special geographical environment in Xinjiang determines the special technical engineering problems, thus it is necessary to
conduct the corresponding technological breakthrough with relevant units. In the institutional reform and innovation, the center will try to realize collaboration in organizational management, personnel team, talent cultivation, scientific organizations and resource sharing and get a breakthrough in collaborative mechanism, innovative cultural construction, cross-school and cross-enterprise enterprise personnel employment, personnel evaluation incentive, united cultivation of students, collaborative study, resource achievement sharing and cooperative exchange.

Construction Situation of the Center

The center implements the collaborative operation mode with the overall planning decision-making of the center council, guide and consulting of academic committee, and management and execution of the center director committee. Each collaborative unit commonly manages it. With the purport of the center article and orientation of major tasks, collaborative units sign an agreement to make an appointment with the center and innovative platform for operation, resource sharing, personnel exchange, talent cultivation, collaborative cooperation, intellectual property and interest sharing. By integrating with professional technical talents, platforms, information, achievements, and instrument equipment, it realizes the in-depth integration for industry-university-research cooperation, positively strives for governmental support, absorbs relevant enterprises to invest in the center, and ensures sustainable development in the center.

In institutional system reform and innovation, the center will try to realize cooperation in organizational management, personnel team, talent cultivation, scientific organizations and resource sharing and get a breakthrough in collaborative mechanism, innovative cultural construction, cross-school and cross-enterprise enterprise personnel employment, personnel evaluation incentive, united cultivation of students, collaborative study, resource achievement sharing and cooperative exchange.

INNOVATION OF THE CENTER CONSTRUCTION

On the basis of practice, innovation in applied collaborative innovative center for special rock is carried out from five directions:

(1) Elaborate the research background, define the research target and research significance, compare with the collaborative innovation in colleges and applied collaborative innovation in higher vocational colleges, define the definition of applied collaborative innovation in higher vocational colleges, elaborate its features and main contents, combine with the constructive demands of the “the Silk Road Economic Belt” and features of special rock in countries along the line and confirm the collaborative target.
(2) Establish the open applied collaborative innovative platform, use colleges, government, scientific institutes, and enterprises to develop higher vocational education, use enterprises in domestic and Xinjiang that engage in infrastructure in countries along “the Silk Road Economic Belt” and utilize the opportunity to carryout exchange activity in countries along the line, and expand the applied collaborative innovative platform to countries along the line.

(3) Establish the institutional mechanism of collaborative innovation, construct the applied collaborative innovation in higher vocational colleges, and use relevant supporting policies and measures as the safeguard; under the background of “the Silk Road Economic Belt”, the college-university collaborative innovation in countries along the line is a new cooperative mode. The new system and mechanism are used to evacuate organizations and resources to form the innovation on the management system, showing the important significance on development of applied collaborative innovation and efficiency improvement.

(4) Make innovations on talent team construction in higher vocational colleges: by aiming at shortcomings in practice of domestic vocational college teachers and scientific research ability, take full advantage of advantages in the applied collaborative innovative platform, combine with the scientific innovative team construction of special rock in the college, and explore the new mode of practice-based and scientific-based talent team construction in vocational.

(5) Study on the collaborative innovation approach: focus on studying scientific research innovation, professional improvement innovation and innovation on serving for the society. scientific research innovation, extensive distribution of special rock in countries along “the Silk Road Economic Belt”, provide lots of opportunities for scientific innovation; through the practice in scientific innovative team of special rock in higher vocational colleges, explore the new approach of scientific innovation in higher vocational colleges; for professional improvement innovation, use the advantages in the applied collaborative innovative center of special rock, study the “4+0” civil engineering major and professional improvement in other higher vocational specialty, explore the new approach for professional improvement; innovation on serving for society, Xinjiang takes the lead in road building technology in salty soil, Aeolian sand and snowdrift and becomes advanced around the world. By virtue of “the Silk Road Economic Belt”, on the basis of traditional service society, it is necessary to fully develop the advantages in the applied innovative center for special rock, keep a foothold and promote advanced technology to countries along the line.

CONCLUSIONS

Comparing the collaborative innovation of colleges and universities and the innovation of application technology in higher vocational colleges, the definition of application technology collaborative innovation in higher vocational colleges is defined and its characteristics and main contents are expounded. In combination
with the demand of the construction of "silk road economic belt" and the characteristics of special rock and soil in the countries along the belt and road, the cooperative target is determined. Create open application technology collaborative innovation platform; to establish the mechanism and mechanism of collaborative innovation; Innovating the talent team construction in higher vocational colleges; Research on collaborative innovation approaches, it is a reference for the construction of the application technology collaborative innovation center of the countries along the “silk road economic belt”.

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