

Research and Reflection on the Talent Training Mode of “Million Enrollment Expansion” of Road and Bridge Engineering Technology Specialty in Seasonal Freezing Area

Yueshu Li

Jilin Communications Polytechnic, Changchun 130012, Jilin, China.

Fund Project: Research Project on Teaching Reform of Vocational Education and Adult Education in Jilin Province, Project Name: Research and Reflection on the Talent Training Mode of “Million Enrollment Expansion” of Road and Bridge Engineering Technology Specialty in Seasonal Freezing Area, Project Approval No: 2020ZCY129.

Abstract: In March 2019, the central government proposed a “million enrollment expansion” plan. Under this background, higher vocational colleges actively expand the enrollment scale. It has made great contributions to the rational operation of the national economy, expanding employment and improving the quality of employment. At present, road and bridge engineering technicians are necessary professional and technical talents in the traffic construction of seasonal freezing areas in China. They are of great significance to solve the special problems of road and bridge construction in seasonal freezing areas and improve the quality of regional road and bridge construction. Taking the seasonal freezing area as an example, this paper analyzes the effective countermeasures for higher vocational colleges to do a good job in the talent training of road and bridge engineering technology specialty under the background of million enrollment expansion.

Keywords: Seasonal Freezing Area; Road and Bridge Engineering Technology; Million Enrollment Expansion; Personnel Training

1. Thoughts on talent training of road and bridge engineering technology specialty in seasonal freezing area

China’s seasonal frozen areas occupy more than half of the land area, and relevant road traffic is vulnerable to freezing damage. According to the statistical data of Jilin Province, the maintenance cost of roads and bridges caused by freezing damage is up to 300 million per year, resulting in serious economic and resource waste. It is necessary to solve the technical treatment problems of freezing damage, so as to promote the high-quality development of road and bridge projects in seasonal frozen areas. Carrying out the million enrollment expansion plan is not only an important way to alleviate the current shortage of skilled talents in China, but also the need to alleviate China’s severe employment situation, which promote industrial optimization, upgrade and drive high-quality economic development. It can also provide new learning opportunities for veterans, laid-off workers and new professional peasant workers and promote their smooth employment in the future. In this context, it is necessary to expand the enrollment of road and bridge engineering technology specialty in higher vocational colleges and cultivate innovative talents.

From the perspective of road and bridge construction in the seasonal freezing area, because the seasonal freezing area occupies a large land area, the road and bridge construction quantities in the corresponding seasonal freezing area will also be relatively large in the future, which requires a large number of road and bridge engineering technical professionals. At

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doi:10.18686/ahc.v5i8.3898

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present, there is a lack of talents in this field, especially for the seasonal freezing area, and there is a lack of special road and bridge engineering technical professionals, and relevant personnel training is in progress. There is no professional talent training of road and bridge engineering technology specifically aimed at the climate characteristics of the seasonal freezing area, but the talent training involves the treatment technology and scheme of road and bridge freezing damage, which is far from meeting the needs of road and bridge architectural design in the seasonal freezing area and is not conducive to truly improving the quality and level of road and bridge construction in the seasonal freezing area. In this regard, based on the training background of expanding the enrollment of millions of talents, relevant higher vocational colleges in the seasonal freezing area should, in combination with the characteristics and needs of regional road and bridge engineering, set up special courses for road and bridge engineering technology in the seasonal freezing area, expand the enrollment scale around the needs of road and bridge construction in the seasonal freezing area, and continuously optimize the course design, so as to promote the teaching of road and bridge engineering technology, and continuously provide effective technical guidance and targeted solutions for professional talent training.

2. Current situation of road and bridge engineering technical professionals in seasonal freezing area

At present, the shortage of professional and technical talents is a prominent problem in the development of road and bridge construction projects in seasonal freezing area, especially the special technical talents with excellent professional theoretical knowledge, high technical level of professional road and bridge projects and experience in road and bridge projects in seasonal freezing area are scarcer. According to the current development of road and bridge engineering technology courses in relevant higher vocational colleges, in the training of professional talents, the theory is strong and the practice is insufficient. Therefore, after the training, it is difficult to effectively connect the professional knowledge and practice of road and bridge Engineering technology in specific jobs, and the technical application and operation ability are insufficient, and it is not conducive to improving the level and quality of road and bridge construction in seasonal freezing area. In terms of the root causes of the problem, the reason is that in the enrollment of road and bridge engineering technology specialty, and students are mainly recruited through general enrollment channels. The enrollment scale of students is limited, and these students lack social practical experience and work experience. Therefore, their understanding of professional knowledge is more limited to the theoretical level and cannot meet the needs of relevant posts as soon as possible.

Under the background of millions of enrollment expansion, the development of enrollment vision of higher vocational colleges has been continuously improved. Some veterans, laid-off workers and new professional migrant workers can become the source of students majoring in road and bridge engineering technology in higher vocational colleges. By recruiting these students, they can be combined with general enrollment, so that they can develop their strengths, avoid their weaknesses in professional talent training, and lead to learn by experienced social personages, which is conducive to improving the quality of talent training and better meeting the needs of road and bridge construction in seasonal freezing area in the future. However, from the current situation of enrollment of higher vocational colleges in seasonal freezing area, relevant vocational colleges still have reservations in the million enrollment expansion, and the openness of enrollment is not strong, so it is difficult to achieve the effect of million enrollment expansion, and the diversity of students is also insufficient, which affects the improvement of professional talent training quality and efficiency.

3. Countermeasures for talent training of road and bridge engineering technology specialty in seasonal freezing area

3.1 Actively expanding enrollment and recruiting students for the whole society

In view of the shortage of road and bridge engineering technical talents in seasonal freezing area, in order to improve the training quality of professional talents, the region must actively respond to the million enrollment expansion plan, further publicize the national enrollment expansion policy, and clarify the target plan, key groups, specialty setting, school running form, assessment methods and reward policies of the enrollment expansion of vocational colleges, to arrange the next step of enrollment expansion. Relevant higher vocational colleges should realize that the million enrollment expansion is a major strategic deployment of the country. The majority of teaching staff should effectively improve their political position, carry out publicity and contact in multiple channels, forms, means and all directions, and go deep into all counties and districts, in order to actively contact enterprises and relevant departments, adopt flexible and diverse ways of running schools, teaching, management and assessment, and complete the enrollment expansion plan with high quality. We should actively expand enrollment, improve the diversity of students, and create a good atmosphere of “learning culture, learning skills, promoting employment and striving for entrepreneurship” in higher vocational colleges. According to the needs of road and bridge construction in seasonal freezing area, professional teaching management should be strictly enforced to ensure the quality of education and teaching. We should grasp the factors of freezing injury in seasonal

freezing areas, and do a good job in the scientific setting of road and bridge engineering technology specialty, in order to formulate targeted teaching plans, select teaching contents, and improve teaching methods. We should also focus on imparting knowledge and skills to meet the needs of economic and social development and employment, highlight the pertinence and practicability of education and training, and ensure that what we learn is applied.

3.2 Paying attention to the study of key technology courses and improving the pertinence of road and bridge construction specialty

The cultivation of road and bridge engineering technical professionals in seasonal freezing areas must be different from that in other areas. With the theme of “key technologies of expressway subgrade and pavement construction in seasonal freezing areas”, targeted courses such as highway engineering antifreeze technology, asphalt pavement construction and detection technology, traffic and tourism integration, and Internet online teaching should be adopted, in order to promote the high-quality development of road and bridge transportation in seasonal freezing areas and build a strong transportation province, so high-level technical talents are needed as support. Accordingly, the transportation department of the seasonal freezing area should continue to make efforts in forging a high-quality professional talent team, provide strong talent guarantee for the construction of a transportation power, and meet the needs of road and bridge transportation development in the seasonal freezing area.

In the specific teaching, we should combine all the demonstration contents and assessment indicators of the implementation scheme of the road and bridge demonstration project in the seasonal freezing area, the concept innovation, management innovation, technological innovation and the goal innovation of talent training in the training of technical talents, and also adhere to the theme of “resource conservation and recycling” to overcome the key technologies of expressway and bridge construction in the ecologically sensitive areas of the seasonal freezing area, so as to promote the application of scientific research achievements in the upgrading and utilization of real estate road construction materials, comprehensive utilization of engineering waste materials, frost resistance and durability technology of bridges and tunnels, integration of ecological restoration and folk tourism, water environment protection technology, etc., promote the cultivation of professionals with stronger orientation, and cultivate more reliable professional and technical talents for road and bridge engineering construction projects in seasonal freezing areas.

4. Conclusion

The road and bridge engineering construction in the seasonal freezing area has its particularity and challenge, and the requirements for road and bridge engineering and technology professionals are higher. However, in terms of the current talent training of road and bridge engineering and technology professionals in the seasonal freezing area, the talent training is not practical enough, and the enrollment scale of road and bridge engineering and technology professionals is limited, which is difficult to meet the needs of the road and bridge talent market in the seasonal freezing area. In this regard, based on the national million enrollment expansion plan, relevant vocational colleges should accelerate the million enrollment expansion, actively recruit students from the society, and pay attention to the optimal design of courses for road and bridge engineering technology, in order to grasp the core teaching contents, improve the pertinence of talent training for road and bridge engineering technology, and cultivate more high-quality professionals with post adaptability and technology application for road and bridge construction in seasonal freezing area, as well as promote the continuous improvement of road and bridge construction quality in seasonal freezing area.

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