Investigation on the electric power personnel training mode in Tibet areas

Liu Ruihua, Yang Li, Xi Chuan, Liu Xiaojue, Zhao Zhoufang, Li Lingzhou, Yuan Juan
Sichuan Electric Vocational and Technical College, Chengdu, China

Abstract—In this paper, through on-the-spot investigation of Sichuan Tibetan power enterprises, we exchange the current training mode of Power Talents in Tibetan areas, and exchange with enterprises the feasibility of modern apprenticeship implementation scheme. Through the investigation, we further optimize and improve the training mode of Power Talents in Tibetan areas, ensure the quality of education, and promote the reserve and development of Power Talents in Tibetan areas.

1. Introduction
Due to historical reasons, Sichuan Tibetan power grid infrastructure is weak, management lags behind, human resources of power supply enterprises in Tibet are seriously lacking, and the talent structure is becoming more and more aging, which makes it difficult for Tibetan power supply service quality and service level to provide strong support for the economic and social development of Tibet. Based on the contradiction and conflict between the leaping development of power grid in Tibet and the weak infrastructure of power supply enterprises in Tibet, the college conducts free training by recruiting local high school graduates in the collection area, and then returns to fixed-point units for resettlement after graduation.

Through interview, discussion and questionnaire survey, the paper conducts on-the-spot investigation on the enterprises, so as to understand the role of "three Ding sheng" in the development of electric power enterprises in Tibetan areas, master the working ability, work efficiency, service consciousness, cooperation ability and work initiative of "three Ding sheng", and verify the effectiveness and pertinence of talent training program. Through the self behavior ability evaluation of "three fixed students", as well as the evaluation of the training effect by colleagues, direct supervisors, human resources department and other relevant personnel during the work period of "three fixed students", we can master the behavior performance of "three fixed students", and listen to the training suggestions on improving the "three fixed students" behavior and improving the work quality and skills, so as to further optimize and improve the talent training. The program ensures the quality of training, promotes the reserve and development of Power Talents in Tibet, and provides effective support for the future power industry in Tibet. In accordance with the "directional enrollment, orientation training, orientation placement" training method, students are called " San Ding sheng " in this paper.

2. Research purpose
Firstly, introduces the background, characteristics, progress and implementation of the pilot project of modern apprenticeship in vocational education, and discusses the solutions to the related problems in the process of project implementation. Introduces the joint enrollment and recruitment work of the
college's agent apprenticeship system, which involves the enrollment plan, enrollment brochures and enrollment programs, targeted training policies, and the publicity of the advantages and characteristics of the college.

Secondly, the teaching management methods, teaching quality management methods, personnel training programs, students' daily management and other contents were discussed with relevant leaders of Sichuan Tibetan prefecture company and former directional training students, and opinions and suggestions were collected to revise them, so as to make the management methods, management plans and training programs closer to reality and more targeted.

Thirdly, Understand the talent demand and post demand of Tibetan power supply company, and understand the development plan of Sichuan Tibetan prefecture in the next three or five years, so as to lay emphasis on the curriculum in the future, make the course content closer to the actual situation, make the training close to the demand, and better cultivate practical talents for the company.

3. RESEARCH FORM
The survey was conducted in the following ways:
Firstly, the teachers of the project team and the leaders of the power production enterprises held a forum;
Secondly, the teachers of the project team pay a return visit to the "SANDINGSHENG" who have graduated;
Thirdly, the questionnaire was distributed.

4. Research process

4.1. The current mode of talent training in Tibetan areas
With the rapid development of power grid today, in the new situation of vocational education, higher expectations and requirements are put forward for students, and the pilot project of modern apprenticeship emerges as the times require.

Figure 1 Implementation process of modern apprenticeship power talent training mode project
The pilot class of modern apprenticeship system has four subcategories: substation equipment maintenance, transmission line inspection, distribution line and equipment operation and maintenance, relay protection and automatic device operation and maintenance. The teaching content is sorted out according to the teaching process of 1.5 academic year + 1 year + 0.5 school year, that is, learning theoretical knowledge in the first 1.5 school year, learning skill operation in the middle school year, and participating in post practice in corresponding units in the last 0.5 school year. It has the characteristics of "school enterprise collaborative education", "recruitment means Recruitment", "admission into the factory", "dual subject of school and enterprise", "double tutor". The specific objectives are shown in Table 1:

Table 1: Objectives of the pilot project of talent cultivation in Tibetan areas based on Modern Apprenticeship

| Target | Requirement |
|--------|-------------|
| Establishing the operating mechanism of Modern Apprenticeship | Establish work leadership and implementation team, formulate work plan, form teaching management, student management, evaluation and other systems, and form a school enterprise collaborative education mechanism with strong promotion and co-construction. |
| Integration of enrollment and recruitment | Schools and enterprises jointly formulate joint recruitment and recruitment scheme, carry out targeted training and enrollment of State Grid Corporation of China, select students to set up modern apprenticeship pilot classes (substation equipment maintenance, transmission line transportation inspection, distribution line and equipment operation and maintenance, relay protection and automatic device operation and maintenance), sign tripartite agreements among schools, enterprises and apprentices, and implement apprenticeship in school and internship in enterprises. |
| Personnel training system and standards | According to the enterprise oriented training objectives, combined with the on-the-job training and assessment standards for production personnel, jointly formulate the professional training program for modern apprenticeship pilot program, construct the professional curriculum system, and develop professional curriculum standards, post training assessment standards, characteristic teaching materials, experimental training guidance books and other supporting teaching resources. |
| Teachers' team for mutual employment between schools and enterprises | Improve the management method of "two-way temporary post" in schools and enterprises, establish a mechanism for selecting, training, rewarding and punishing double tutors, establish a team of double tutors, and select full-time teachers and enterprise part-time internal trainers to teach jointly in accordance with the "work study combination" and "school enterprise dual subject" education mode. |
| Management system reflecting the characteristics of Modern Apprenticeship | Schools and enterprises should jointly establish modern apprenticeship teaching management methods, teaching quality management methods, students (apprentices) daily management methods, practice and training safety management regulations and other system management systems; implement various types of insurance for students (apprentices); establish a double tutorial system, schools and enterprises jointly carry out teaching, formulate school enterprise dual evaluation standards for the whole process of assessment, and form a sound teaching organization implement, monitor, supervise and evaluate the quality management system. |
| Others | The school and enterprise should jointly improve the professional training base adapting to the characteristics of modern apprenticeship, follow the development trend of electric power enterprises, strengthen the operation, |
maintenance and update of facilities and equipment of professional experimental training room, and improve the supporting teaching resources of professional experimental training room. Colleges and enterprises should jointly improve the professional training base adapting to the characteristics of modern apprenticeship, closely follow the development and change of new technologies, new products, new processes and new materials of electric power enterprises, strengthen the operation, maintenance and update of facilities and equipment of professional experimental training rooms, and improve the supporting teaching resources of professional experimental training rooms.

4.2. Problems and suggestions of state companies and branches

About the proportion of theory, practice and post time allocation: enterprises think that the theoretical learning time is relatively short, but the practice process is long. They hope that the school can comprehensively cultivate talents, lay the foundation of professional theoretical education, and at the same time give consideration to the cultivation of moral education and professional ethics, and take human development as the core to cultivate students' self-development learning ability in the later stage. The goal of training is not necessarily all students with very good professional performance, but people who are not afraid of hardship, tired, hardworking and dedicated in practical work. In the process of education, we should appropriately improve the proportion of moral education assessment in the students' comprehensive evaluation system.

The selection of tutors in the dual tutor system and the corresponding incentive mechanism: on the one hand, it is difficult for enterprises to send outstanding technical backbone masters, because of the high production pressure of enterprises, especially the shortage of professional talents in Sichuan Tibetan prefecture; on the other hand, there are problems related to the incentive mechanism of enterprise masters. Since Sichuan electric Power Company has cancelled the subsidies for masters and apprentices in the master led apprentice system. There are corresponding difficulties in the process of development. The lack of sufficient incentive mechanism will inevitably affect the enthusiasm of the enterprise's master to lead the apprentice.

The problems to be solved in the process of enterprise implementation in the internship stage of students: on the one hand, the students' safety is a problem, because students are not formal staff, there is a great potential safety hazard in the enterprise; on the other hand, it is the problem of students' food, housing and transportation, because the provincial company does not have the corresponding document details to explain, we hope there will be corresponding document guidance in the next policy.

Other problems: the enterprise hopes that the school can strengthen the cultivation of students' language writing; at the same time, it hopes that the internship link in the school can be synchronized with the actual situation on site, such as the actual fault handling process and other on-site knowledge publicity and implementation; the students are expected to obtain multiple occupation related certificates in school; their major and assignment do not match, and many power generation graduates are engaged in employment There is a lack of secondary protection talents, even if there are graduates majoring in relay protection, there is no experienced master's guidance. The state company points out that there is no need to train relay protection talents. If it is necessary, they can be transferred from one post to another. It is suggested to cancel the direction of relay protection and automatic device operation and maintenance. It is suggested that the direction of transmission and distribution line inspection should focus on the training of distribution line inspection direction, even without involving transmission. At present, what the state company lacks most is the talents in the marketing direction, so it is suggested to increase the training of marketing posts; in the basic course of computer culture, we should continue to strengthen the practice of common office software, and continue to strengthen the training of students' writing ability. Weakening the study of database, computer training courses,
career development and employment guidance courses, focusing on the study of career development and planning, may not involve employment guidance.

4.3. Return visit and exchange with directional students who have been employed and internship students in Enterprises

To the orientation students who have been employed in the meeting and the internship students in enterprises, the demand questionnaire for vocational education classes in Tibetan areas involving the operation and maintenance direction of substation equipment, the operation and maintenance direction of relay protection and automatic control device, and the transportation and inspection direction of transmission and distribution lines are distributed, and the items to be filled in the form are briefly explained.

4.4. Problems reflected by the employment oriented students

This paper affirms the importance of school learning, thinks that the learning methods gained in the school learning stage are very important, and points out that there is a big gap between the study in the internship stage and the current post knowledge.

Some students pointed out that the great preferential policy of "SANDINGSHENG" has a certain negative effect on learning enthusiasm.

4.5. Problems reflected by internship students

On the issue of funds: since leaving school, they have not received the corresponding subsidies.

In the stage of post practice, the problem of post learning harvest is that one can't take up the post for practical operation, which belongs to general learning.

5. Conclusion

Through the investigation, the companies in various counties generally have a general praise on the application of the knowledge and skills learned by "San Ding sheng" in work practice. At the same time, they share the same regional and cultural background with their colleagues and customers, and have no barrier to language communication. They have obvious advantages over foreign students in carrying out work. They express their views on the training mode, curriculum setting and teaching organization and implementation of "San Ding sheng" Very much. “San Ding sheng” has gradually grown from the fresh force of each county company to the main force. It is the local force and backbone of the county company's production line business. In recent years, almost no "San Ding sheng" has left, and the expected goal and work effect of the project have been achieved. It ensures the normal business development of the county companies and provides strong human resources guarantee for the service of local social and economic development. In the next few years, companies in various counties will gradually have older employees retire. It is urgent to continue to supplement new forces through the "three fixed life" training mode to support the power grid construction in Tibet. Next, we will further promote the training mode of modern apprenticeship talents, so as to provide more suitable power talents for Tibetan areas.

Acknowledgment

Funded Project: Key projects of talent training quality and teaching reform of higher education in Sichuan Province in 2018-2020(JG2018-1027)

REFERENCES

[1] Zou lejing, Zhao Kai. Research on multiple Implementation Paths of talent training mode in Higher Education [J]. Yangtze River technical economy, 2020,4 (S1): 153-155

[2] Liang Shuang, Qin Huazhen. Research on talent cultivation of Higher Vocational Education under the mode of school enterprise cooperation [J]. Education modernization, 2020,7 (47): 12-15
[3] Liu Baolei. New thinking on the talent training mode of "integration of production and education" in school enterprise cooperation [J]. China management informatization, 2020, 23 (10): 217-218

[4] CEN Aifen. Research on connotation system and management strategy of industry education integration system [D]. Guangdong Normal University of technology, 2019

[5] Tian Shanwu, Pu Xiaomin, Xu xiu. System dynamics analysis of entrepreneurial talent training mechanism from the perspective of collaborative innovation [J]. Technology and innovation management, 2018, 39 (04): 365-369