

Innovation and Practice of Vocational Skill Appraisal Management Mode in the Electric Power Industry

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Abstract. In response to the current situation and existing problems of the vocational skill appraisal management mode in the electric power industry, a new practical scheme is proposed in this paper. By constructing a diversified evaluation system, implementing intelligent management methods, and strengthening the effective connection between vocational skill training and appraisal, an innovative management mode is constructed. Combined with practical case analysis, the practical effects and significance of the new management mode in the electric power industry are elaborated.

Keywords: Electric power industry; Vocational skill appraisal; Management mode; Innovation; Practice.

1. Introduction

As the foundation and pillar industry for national economic development, the level and quality of electric power industry is directly related to the steady growth of the national economy and the improvement of people living standards. In recent years, with the rapid development of China economy, the status of the electric power industry has become increasingly prominent, and it has now become an important force driving China socialist modernization.

Regarding the industry development background, China electric power industry has undergone a transition from a planned economy to a market economy. Since the reform and opening-up, the management system of the electric power industry has gradually undergone reforms, and the degree of marketization has continuously increased, forming a diversified market landscape represented by State Grid Corporation of China and China Southern Power Grid, as well as numerous local power enterprises and private enterprises participating.

Vocational skill appraisal, as the core mechanism for assessing the skill levels of professionals in China, relies on a sound legal system to pave a solid path for the professional growth of talent in the electric power industry. This system not only stimulates the desire for professional knowledge among practitioners in the electric power industry but also effectively promotes leapfrog improvements in their professional skills through continuous training activities^[1, 2]. Over the past decade, the vocational skill appraisal system has served as a solid bridge connecting the development needs of the electric power industry with the enhancement of talent quality. Through carefully organized training plans and certification processes, it has forged a high-quality, professional technical team for the electric power industry, laying an indispensable foundation for the industry continued prosperity and progress. Vocational skill appraisal, as a crucial link in ensuring talent cultivation and industry competitiveness improvement in the electric power industry, highlights the importance of innovation and practice in its management mode. However, the current management mode of vocational skill appraisal in the electric power industry faces the following issues. The first, a single evaluation system. The existing evaluation system often focuses on theoretical knowledge assessment while neglecting the evaluation of practical skills, innovative abilities, and professional qualities, resulting in appraisal results that fail to comprehensively reflect the comprehensive abilities of technical personnel. Secondly, backward management methods. Traditional management methods rely on manual operations and paper documentation, which are not only inefficient but also prone to information distortion and management loopholes^[3, 4]. With the rapid development of technologies such as big data and cloud computing, this management method has been difficult to meet the needs of the

modern electric power industry. Thirdly, disconnection between training and appraisal. The connection between vocational skill training and appraisal is not close enough, and there are deviations between training content and appraisal standards, causing the training effect to be unable to directly translate into appraisal outcomes, which affects the effectiveness and authority of vocational skill appraisal. Last, insufficient incentive mechanisms. The lack of effective incentive mechanisms makes it difficult to stimulate the enthusiasm and initiative of technical personnel to participate in vocational skill appraisal, further affecting the overall skill level improvement in the industry. Such issues greatly restrict the quality and effectiveness of vocational skill appraisal work. This paper innovates the current management mode of vocational skill appraisal in the electric power industry, aiming to construct a more scientific, efficient, and dynamic evaluation system to provide strong support for talent selection and cultivation in the electric power industry.

2. Innovation Discussion on the Management Mode of Vocational Skill Appraisal in the Electric Power Industry

The rapid development of electric power technology has led to the continuous emergence and application of a large number of new technologies, new processes, and new management concepts in actual production, which have also raised higher requirements for the knowledge structure, skill quality, and ability level of production personnel^[5]. In such a context, the timeliness of the vocational skill appraisal management mode becomes particularly important. Traditional vocational skill appraisal management modes often have issues such as a single evaluation system and backward management methods, unable to meet the demand for talent quality in the modern electric power industry. Therefore, to promote the development of vocational skill appraisal in the electric power industry, this paper will discuss the innovative ideas surrounding the following aspects.

2.1. Building a diversified evaluation system

The diversified evaluation system no longer relies solely on traditional written tests and interviews as the main assessment methods. Instead, it incorporates multiple dimensions of assessment indicators such as practical operation ability, comprehensive quality, and work experience into the evaluation system. This represents the core content of management mode innovation. By introducing practical skill assessments and adopting methods such as simulated operations and on-site practical operations, it comprehensively evaluates the hands-on ability and problem-solving skills of technicians. Additionally, it establishes evaluation dimensions for innovation ability and professional quality, examining technicians' innovative thinking, communication, and coordination abilities through project presentations, teamwork, and other methods. The assessment adopts a "process + result" dual-track evaluation system, paying attention not only to the final scores but also to performance and effort during the learning process. Ultimately, through diversified evaluation methods, it achieves a more comprehensive and objective assessment of the professional skills of electric power talents, ensuring that the selected talents not only have a solid theoretical foundation but also possess strong practical operation abilities. Secondly, the implementation of intelligent management tools is the key to improving the efficiency of appraisal work. By utilizing modern information technologies such as big data, cloud computing, and artificial intelligence, intelligent management of the professional skill appraisal process can be achieved. For example, through online examination systems, automated scoring and data analysis of examinations can be realized; through intelligent monitoring, the progress and effectiveness of the appraisal can be grasped in real-time, allowing for timely adjustments to the appraisal plan.

2.2. Specific measures for using intelligent management methods

The implementation of intelligent management tools is crucial for enhancing the efficiency of appraisal work. By leveraging modern information technologies such as big data and cloud computing, an information management system for vocational skill appraisal can be established to enable online

operations throughout the entire process, including registration, examination, and score statistics, thereby improving management efficiency. For instance, through online examination systems, automated scoring and data analysis of examinations can be achieved. Furthermore, technologies such as face recognition and electronic surveillance can be utilized during the examination process to ensure fairness and impartiality, and to prevent cheating. Additionally, the establishment of a skill appraisal data analysis platform allows for in-depth analysis of appraisal results, providing a scientific basis for adjusting training content and methods.

2.3. Strengthen vocational skills training and evaluation

The enhancement of vocational skills training and assessment is crucial. The close integration of training and assessment ensures that the training content aligns with actual job demands. Based on the standards of vocational skills assessment, closely linked training courses and teaching plans are developed to guarantee that the training content meets the assessment requirements. The closed-loop management of "training-assessment-feedback-improvement" is thoroughly implemented, with assessment results promptly fed back to training institutions and trainees, thereby further promoting continuous improvement in training quality. By establishing a linkage mechanism between vocational skills training and assessment, the optimal allocation of training resources can be facilitated, enhancing training effectiveness.

2.4. Establish an evaluation and reward system

To further enhance the enthusiasm and sense of honor of technicians participating in assessments, incentive measures such as material rewards and job promotions can be given to technicians who pass the vocational skills assessments. Additionally, an outstanding skilled talent recognition system should be established to regularly select and commend individuals and teams that perform outstandingly in vocational skills assessments, fostering an environment that respects skills and talents.

2.5. Dynamically adjust the evaluation standard library for normalized implementation

With the continuous technological advancements and changes in market demand within the electric power industry, the standards and content of vocational skill evaluations should be correspondingly adjusted to maintain the timeliness and adaptability of the evaluation system. It is necessary to establish fixed cycles for comprehensive evaluations of existing standards. Feedback should be collected through methods such as questionnaires, forums, and industry expert consultations to understand the effectiveness and issues of the standards in practical applications. By closely tracking the research and application of new technologies in the electric power industry, such as smart grids, renewable energy generation, and energy storage technologies, the technical requirements, operational norms, and key knowledge points in the evaluation standards should be updated in a timely manner. Additionally, leveraging big data and artificial intelligence technologies to conduct real-time monitoring of technological trends, policy changes, and market demands within the electric power industry can provide data support for standard adjustments. Through the regular updating of the evaluation criteria database, the electric power industry can ensure that vocational skill evaluation work remains synchronized with industry development, thereby cultivating more high-quality skilled talents who meet market demands.

3. Analysis of Practical Cases

Below is an analysis of two implementation cases to further verify the application effectiveness and feasibility of the novel vocational skill assessment management system proposed in this paper within the electric power industry.

3.1. Case 1

Taking the innovation of a vocational skill assessment management model in a certain electric power company as an example, this company adopted a series of innovative measures when faced with issues such as a monolithic talent evaluation system and a disconnect between training and actual work. Firstly, it established a diversified evaluation system that incorporated multiple dimensions such as theoretical exams, practical operations, and job performance into the evaluation criteria, ensuring comprehensive and fair evaluations. Simultaneously, the company introduced intelligent management tools, such as developing an online exam system and establishing a talent database, which significantly improved the efficiency and accuracy of assessment work. Furthermore, the company strengthened the connection between vocational skill training and evaluation. By analyzing job requirements, it formulated more targeted training plans and integrated training outcomes with vocational skill assessments. For instance, it regularly organized internal skill competitions and used competition results as important references for vocational skill assessments, fully stimulating employees' work enthusiasm and competitive spirit. Additionally, the company established a vocational skill advancement path, further motivating technicians' enthusiasm and sense of achievement in participating in assessments and providing a clear career development path for employees.

3.2. Case 2

Case Two: A vocational skill assessment institution in the electric power industry has initially achieved certain results in its structural reform. However, with the implementation of the novel vocational skill assessment management system, the institution gradually identified issues such as cumbersome assessment processes and opaque evaluation standards, and promptly conducted process optimization and standard revision. By dynamically adjusting the implementation of the evaluation standards library, it further simplified the assessment process, shortened the assessment cycle, and improved work efficiency. Meanwhile, the institution made the evaluation standards public, increasing the transparency of assessment work and gaining universal recognition both within and outside the industry.

4. Summary

This paper proposes a novel vocational skill assessment management model for the electric power industry. After a period of exploration and implementation, it has achieved remarkable results and provided valuable insights for other industries.

The innovative management model enhances the accuracy and fairness of vocational skill assessments. Through a diversified evaluation system, it enables a more comprehensive assessment of the vocational skills of employees in the electric power industry, ensuring the reasonable selection and allocation of talent. Secondly, the application of intelligent management tools improves the efficiency of assessment work, reduces human errors, and ensures the credibility of assessment results. Additionally, the connection between training and evaluation not only enhances employees' professional skills but also provides them with a clear career development path, stimulating their work enthusiasm and learning passion.

Case studies show that innovations in the vocational skill assessment management model must keep pace with industry development needs and evolve with the times. Firstly, constructing a diversified evaluation system is crucial for improving assessment quality, which requires joint efforts from experts both within and outside the industry to continuously optimize evaluation standards and processes. Secondly, the application of intelligent management tools is an inevitable trend for improving work efficiency, necessitating increased investment in technology by the industry to enhance the informatization level of assessment work. Furthermore, the close integration of vocational skill assessments with training is an effective way to improve employees' comprehensive

qualities, requiring joint efforts from enterprises and assessment institutions to form a positive interaction.

In summary, the innovation and practice of the vocational skill assessment management model in the electric power industry have not only improved the quality of talent cultivation in the industry but also provided the following insights for other industries. Firstly, vocational skill assessments should be closely integrated with industry development, continuously adapting to new technologies and requirements. Secondly, vocational skill assessments should focus on the assessment of practical operating abilities to ensure the practicality of talent selection. Thirdly, vocational skill assessments should strengthen their connection with other talent cultivation links to form a complete talent cultivation chain. Through these insights, we can promote the reform and development of vocational skill assessment management models in more industries. This paper conducts an in-depth exploration of the innovation and practice of the vocational skill assessment management model in the electric power industry and proposes a series of targeted reform measures. In practical applications, these innovative management models have achieved remarkable results, providing a strong guarantee for talent selection and cultivation in the electric power industry.

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