

Analysis on the Optimization Strategy of China's Postdoctoral Management System under the Comparison between China and Foreign Countries

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Abstract: With the acceleration of the national strategy of rejuvenating the country through science and technology, it is urgent to improve the level of scientific and technological innovation. Young scientific research talents, especially the group represented by postdoctoral researchers, are the new force of national innovative talents and increasingly become an active group in scientific research cooperation and cultural exchange. Therefore, the construction of post-doctoral system with Chinese characteristics has become an important part of national strategic talent cultivation. Based on this, this paper conducts a comparative analysis of the post-doctoral management system at home and abroad, and proposes the optimization strategy of the post-doctoral management system at home and abroad under the new era background, so as to provide human resources support for the development of national scientific research.

1. Introduction

Young scientific research talents, especially the group represented by postdoctoral researchers, are the new force of national innovative talents and increasingly become an active group in scientific research cooperation and cultural exchange. At the same time, the cultivation of young scientific research talents, especially the construction of young scientific research talents represented by the post-doctoral system with Chinese characteristics, has increasingly become the top priority of the cultivation of national strategic talents.

Since the implementation of the postdoctoral system in China for 36 years, the number of people entering the station has exceeded 300000, showing an annual growth of nearly 20% since 2018. With the growing development of China's post-doctoral cause and the growing ranks, the traditional post-doctoral management system is difficult to meet the needs of the times. It needs to make targeted optimization and adjustment in combination with the domestic development situation to achieve progress with the times. For this reason, relevant personnel need to constantly summarize work experience in post-doctoral management, introduce advanced management concepts and mature management systems from western countries, develop a series of scientific, reasonable and effective post-doctoral management systems, significantly improve the efficiency and quality of post-doctoral management, and also carry out scientific and technological innovation and development for China's

scientific research strength Social and economic development is supported by high-quality research talents.

2. Comparison of Postdoctoral Management Systems between China and Foreign Countries in the New Era

2.1. There are differences in system generation and management mode

Considering the current situation, the postdoctoral management system of western countries represented by the United States has gone through a long-term stable process. The government departments provide strong financial support for postdoctoral research and promote the stable development of the postdoctoral system. However, at the same time, the government department did not set up an independent and unified management organization in combination with the post-doctoral system needs, and did not directly manage the post-doctors. Each unit can introduce post-doctors in combination with its own development needs, which is mainly restricted and regulated by the market; France, on the other hand, has relatively clear job recruitment, but has not formed a unified management organization; Germany conducts management through fund support, such as Humboldt Fund. In China, the post-doctoral system is organized and implemented by government departments, and the management committee is composed of government department leaders, who are responsible for various post-doctoral management responsibilities. Disciplines and units that recruit post-doctors need to be recognized by the management committee. The number of post-doctors is generally planned and unified by the management committee office.

2.2. There are differences in the form of management system

Considering the current situation, the United States has not officially introduced the post-doctoral management system, but the post-doctoral system is still recognized by the U.S. government research institutions and universities, and has formed a relatively complete system. The American Research Council and the National Science Foundation have a more precise and strict concept of post-doctoral data statistics and definitions. However, due to the lack of a series of explicit provisions, there is a problem of vague definitions, and different units have different standards for defining postdoctoral personnel; However, France and Germany have not issued clear post-doctoral systems and regulations, which means that post-doctoral management cannot show the trend of institutionalized and standardized development, and is vulnerable to external factors and internal instability. However, our country has issued clear management systems and regulations for post-doctoral management, and all personnel registered by the post-doctoral management committee are called post-doctoral personnel [1].

2.3. There are huge differences in regulatory mechanisms

Combined with the current situation, the United States has formed a relatively perfect self-restraint mechanism for post-doctoral management. Due to the diversity of post-doctoral forms, the management methods and management methods are also different. For example, there are some differences between post doctors in institutions of higher learning and those in government departments. However, based on the analysis of the overall situation, the management of post doctors in the United States is more flexible and loose, focusing on providing sufficient space for independent development for post doctors, and stimulating their sense of competition and self-restraint. Give play to the subjective initiative and participation enthusiasm of grassroots units, and do not form a unified management mechanism and recognized quality assessment standards for post-doctors. Research

institutions and relevant managers usually assess the qualifications of post-doctors. The second is to supervise the actual working period of relevant postdoctoral personnel, so as to avoid the problem that enterprises or units employ a postdoctoral personnel indefinitely. The professor is responsible for other management matters. Postdoctoral personnel can regularly participate in the fellowship and postdoctoral association to organize academic exchange and research activities, provide postdoctoral personnel with channels and platforms for communication and interaction with all sectors of society and management, and also provide high-quality employment services for postdoctoral personnel to ensure that they can actively participate in the work process and apply their knowledge and skills to a series of research work. With the help of research results, we have obtained the recommendation and good evaluation of professors, and sought high-quality and stable jobs. The post-doctoral management in France and Germany focuses on fund support management [2].

3. Strategies for Optimizing Postdoctoral Management System at Home and Abroad in the New Era

3.1. Constantly optimize management authority

In the new era, China's post-doctoral work should actively change the traditional concept of work, from management centered to service centered, to meet the development needs of the times and the personalized development needs of post-doctoral personnel. To achieve this goal, it is necessary to give full play to the advantages and value of the post-doctoral management system, constantly optimize the management authority and delegate the management authority, so as to significantly improve the overall management efficiency and effectively mobilize the participation enthusiasm of all units. In combination with foreign management experience, post-doctoral management needs to be more flexible and relaxed to provide broad development space for post-doctoral members and various units, to ensure that they can constantly optimize and adjust in light of the actual situation, to ensure that post-doctoral management can adapt to local conditions, keep pace with the times, and meet the needs of special circumstances and the needs of the times, We will pay more attention to stimulating the self-discipline and competition awareness of postdoctoral personnel, and effectively mobilize the participation enthusiasm of grass-roots units. On the basis of the traditional post-doctoral management system, we have made targeted optimization and adjustment, introduced advanced western management concepts and management models, and ensured that the post-doctoral management model can point out the development direction for post-doctoral management, bring innovation and development assistance, and ensure that the efficiency of post-doctoral management is steadily improved [3].

3.2. Build a more perfect management system

In the new era, scientific research projects with challenging characteristics and innovative functions are the core component of post-doctoral management, and also an important form of training post-doctoral personnel. In combination with the current situation, post-doctoral management systems around the world have more stringent requirements for research topics, with cutting-edge, representative and exploratory characteristics, and need to continue to move towards the established development direction. To this end, training postdoctoral personnel with innovative ability and independent innovation awareness is the core goal of management model innovation. In the traditional post-doctoral personnel training link, more attention is paid to the assessment and evaluation of postdoctoral personnel, emphasizing the number of SCI. Under the background of the new era, it is necessary to increase innovation in post-doctoral management concepts and management models. The establishment of the management system should give full play to the

advantages of postdoctoral talents in knowledge reserve, research ability and innovation ability, effectively mobilize the innovation enthusiasm and participation enthusiasm of postdoctoral personnel, build a more perfect talent distribution system, talent incentive mechanism and talent evaluation mechanism, and provide high-quality conditions and space for postdoctoral personnel to acquire professional knowledge, expand their thinking, cultivate various abilities and display their talents, Only in this way can we ensure that high-quality talents stand out in the fierce market environment. Secondly, the scientific research tasks carried out by postdoctoral personnel have certain particularity. Setting rigid requirements is not conducive to the transformation of postdoctoral knowledge and the embodiment of value; On the contrary, if we keep loose management principles and do not set rigid requirements, we will lack scientific and reasonable evaluation standards and cannot achieve quantitative evaluation. To this end, the evaluation of postdoctoral work should adhere to the principle of dynamic adjustment, combine the needs of the times, make scientific optimization and adjustment in combination with disciplines and specialties, and develop a more perfect indicator system in combination with the concept of hierarchical evaluation and classified evaluation. The evaluation of postdoctoral work should adhere to the principle of "different from person to person", to ensure that the evaluation work has unified and personalized characteristics.

3.2.1. Improve the three-level management model

We will improve the three-level responsibility management system, and the national, local and station setting units will jointly form a work responsibility system, making hierarchical management and hierarchical management more smooth. At the same time, for each mobile station, workstation, contact tutor, university and management department of postdoctoral recruitment, postdoctoral training and postdoctoral performance assessment, their respective post-responsibilities should also be clarified, and their respective management advantages and roles should be played to ensure that the three-level tasks can be scientifically and effectively implemented, and a more perfect three-level linkage responsibility mechanism should be formed, To ensure that post-doctoral management can achieve scientific development. It should be noted that the evaluation and assessment of post-doctoral management work is related to the smooth development of post-doctoral management work. Therefore, in the system construction link, we should start from the subject evaluation to establish a link between post-doctoral assessment work and target management work. Starting from the most basic theme selection, strictly control the quality, establish a link between the periodic assessment work and the daily assessment work, implement the responsibilities of all parties at each key node, effectively stimulate postdoctoral staff to love their jobs and work, ensure that they can shine in the professional research work, win good career development prospects and broad development space for themselves at the same time, And contribute to the great rejuvenation of the Chinese nation.

3.2.2. Increase national investment and broaden the mechanism of multi-channel investment

In recent years, the development of China's postdoctoral cause has been accelerating, which is directly related to financial support and funding. However, due to the impact of many factors, China's postdoctoral treatment is still low in the process of rapid development of postdoctoral cause. Therefore, it is particularly important to increase national investment and broaden the mechanism of multi-channel investment in the new era. First, it is suggested that the national level should strengthen the investment in the support of postdoctoral fund, improve the traditional investment method, formulate a program plan for key funding, support postdoctoral students with outstanding achievements or very promising prospects, and combine point with area, giving consideration to the support of postdoctoral students in basic disciplines, so that in the process of key funding, it can ensure the orderly development of all work; Secondly, we should fully mobilize the area polarity at

the national level, the local government level and the enterprise and public institution level, guide enterprises and public institutions to fully realize the importance of post-doctoral system investment and capital investment, so that enterprises and public institutions can fully feel that more investment can produce more benefits, so that to a certain extent, we can expand the channels of post-doctoral system investment and capital investment; Third, focus on the integration of national core science and technology research projects, economic construction projects, basic discipline projects and post-doctoral development. In addition to expanding the source of post-doctoral investment, it is also necessary to promote the development of the post-doctoral system to provide services for the innovation, research and development of national science and technology, and the progress of social undertakings, so that in the process of serving the society, it can obtain sustained social demand power, This is also a channel to provide more sources of input for post-doctors. In addition, we also need to actively learn from the successful experience of foreign countries in the construction of post-doctoral funding sources. According to the actual situation of China, we should carry out the construction of various funding sources in line with local conditions, fully highlight the role of enterprises and institutions, private capital, social capital, national and personal levels, increase investment sources, and promote the good development of post-doctoral undertakings.

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