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# Research on Existing Problems and Their Countermeasures Exploration in the Construction of Rural Popular Science Talents under the Revitalization of the Countryside

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***Abstract:*** *According to the "Fourteenth Five-Year Plan" and the long-term target outline of 2035, we must carry out extensive popular science activities, create an environment that promotes innovation and science, and improve the scientific quality of the whole population. This article starts from the perspective of popular science as a means of helping rural revitalization, discusses in detail the development of rural science popularization teams, analyzes the status quo of popular science talents, emphasizes the role of popular science talents in rural revitalization, summarizes the main issues of building rural science popularization teams, offers countermeasures and suggests solutions to the problems.*

***Keywords:*** *Rural revitalization; Rural science popularization; Rural science popularization talents*

## 1. Introduction

General Secretary Xi Jinping states, "Scientific and technological innovation and science popularization are the two wings of innovation and development; scientific popularization should be given the same importance as scientific and technological innovation." China's scientific popularization work has reached a new phase, and rural popularization has always been an integral part of it. The popularization of rural areas plays an important role in doing a good job of promoting agriculture and rural areas. For this reason, a study of talent teams for rural science popularization is of great significance in rural rejuvenation.

## 2. Rural Science Talent

A rural popular science talent should possess three factors: first, they need to be rooted in the countryside throughout the year and be well versed in the local environment; second, they need to receive specific education and possess essential scientific qualities; third, they need to be involved in agricultural services and possess specific professional skills.

## 3. The Current Development Status of Chinese Popular Science Talents

### *3.1 Uneven Distribution of Science Popularized Talent*

There are urban-rural differences in Chinese science popularization and unbalanced regional distribution [1]. Currently, China's scientific quality level is in the stage of rapid improvement; however, the unbalanced contradictions of urban and rural development have not been resolved. In 2015, the scientific quality of citizens of urban and rural residents was basically the same as the level in 2020; the gap between urban and rural areas has not narrowed.

The scientific quality of citizens in different regions shows the characteristics of matching their economic and social development. A large number of high-quality talents have gathered in the eastern region with a high level of economic, and the popular science talents in the Central and Western regions are relatively insufficient [2]. Therefore, the scientific quality of citizens in the eastern region is leading, as shown in Table 1.

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*Table 1: 2015-2020 The scientific quality of Chinese citizens from 2015-2020*

| Years | 2015 | 2018 | 2020 |
|---|---|---|---|
| Chinese citizens have the proportion of scientific quality | 6.20% | 8.47% | 10.56% |
| Urban residents have the proportion of a scientific quality | 9.72% | 11.55% | 13.75% |
| Rural residents have the proportion of scientific quality | 2.43% | 4.93% | 6.45% |
| The eastern area has the proportion of scientific quality | 8.01% | 10.77% | 13.27% |
| The central area has the proportion of scientific quality | 5.45% | 7.96% | 10.13% |
| The western area has the proportion of scientific quality | 4.33% | 6.49% | 8.44% |

The data source is "Chinese Popular Science Statistics (2015-2020) ".

### *3.2 The Slow Development of the Total Number of Popular Science Talents*

National science popularization statistics from 2015-2020 show that the Chinese popular science talent team is in a stable stage of development, as shown in Table 2.

*Table 2: The number of popular science talents from 2015-2020 (unit: 10,000 people)*

| Talent type/Years | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Science talent/ 10,000 people | 205.38 | 185.23 | 179.45 | 178.49 | 187.06 | 181.30 |

The data source is "Chinese popular science statistics(2015-2020)".

### *3.3. The Quality of Popular Science Talents Continuous Improvement*

The level of popular science talent academic qualifications reflects the quality of popular science talent [3]. The number of popular science personnel above the national intermediate titles or degrees or above university has increased year by year, and the quality of popular science talents has improved significantly.

China has entered the critical period of a well-off society to achieve socialist modernization and the sprint stage of innovative countries [4]. The quality level of popular science talents has been continuously enhanced, promoting the continuous improvement of the scientific quality of the whole people, promoting the development of science popularization in China, and further deepening popular science talents.

## 4. The Role of Rural Popular Science Talents in Rural Rejuvenation

### *4.1 Rural Popular Science Talents Help to Resolve the Problem of " Three Agriculture "*

#### *4.1.1 Improvement of the Farmers' Scientific Quality*

China's rural population base is large, the quantity is large, and the cultural level of farmers is generally low. Even in some regions, there are more severe feudal superstition activities in rural areas, which increased from the current social development of China. But with the popular science talents vigorously carrying out rural science popularization work, the scientific quality of Chinese farmers has risen steadily [5]. Popular science talents take practical forms and measures, meet the different popular science needs of all regions and farmers, make most farmers master relevant scientific knowledge, and improve the level of peasant cognitive and scientific quality.

#### *4.1.2 The Promotion of Rural Poverty Alleviation and Getting rich*

Rural popular science is an important catalyst for farmers to get rich and adjust the development structure of the agricultural industry [6]. Rural popular science can not only strengthen farmers' work skills and help farmers master the ability of "hematopoiesis"; it can also liberate and develop rural productivity and provide strong support for the construction of new socialist rural areas.

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#### *4.1.3 The Promotion of the Agricultural Science Development*

Agriculture is the basic industry, and farmers are the main force of agricultural production. Therefore, farmers' cognition and scientific level largely determine the development of agriculture. By carrying out popular science work, it gives professional guidance in farmers' production and life, ensures the scientific nature of agricultural production, and can effectively promote the development of agricultural science.

### *4.2 Rural Popular Science Talents Help Rural Revitalization*

Rural popular science talents are the pillars and souls of rural science popularization. Rural science is not only a link between science and farmers; it is also one of the important channels for achieving science and technology to enable rural rejuvenation [7]. Popular science service to the countryside can truly implement the overall requirements of the country's revitalization strategy: "prosperous industries, ecological livability [8], rural style civilization, effective governance, and rich life."

## 5. Problems in the Construction of Rural Popular Science Talents

### *5.1 The Shortage of the Quantity and Quality of Rural Science Popularization Talents*

According to data, the scale of the national popular science work funding in 2020 was 17.172 billion yuan, the size of the national science popularization personnel is 1.8130 million, the personnel structure continues to optimize, and the number of full-time personnel has continued to increase. The proportion of middle-level vocational titles or above or undergraduate degrees or above in full-time and part-time personnel is 62.45%and 55.21%, respectively. Both have risen since 2019. Full-time popular science creators reached 18,500, compared with 2019 has increased by 6.50% [9]. At the same time, the comprehensive ability of rural popular science talents also makes it difficult to meet the requirements of contemporary science popularization work, mainly manifested in the single science talent discipline, which cannot be suitable for the current cross-border integration situation [10]. Personnel engaged in science creation in rural areas, and there are also difficulties in expression ability and professional standards.

### *5.2 Strengthening the Construction of the Team of Rural Science Popularization Personnel*

From the actual situation, the current rural science popularization team is a "temporary" passive participation. Most popular science personnel are volunteers who have lectured in rural schools or college student volunteers who use the winter and summer vacations to carry out science popularization activities in the countryside [11]. Most of them were invited to join during the science popularization process, mainly cooperating with some popular science activities to carry out work. The popular science organizers are generally the leader of rural schools. It is generally based on the person who can perform popular science and the scale of the popular science object. The venues, materials, facilities, etc., that can be used at that time determine whether the popular science activities are launched or how many large-scale activities are started. These uncertain factors have led to the instability of scientists. On the other hand, because rural science popular personnel generally do not receive more formal popular science skills training, it cannot improve their popular science ability and skills, it is difficult to play a key role in the actual popular science process, most of them can only be used as supporting roles. At the same time, these popular science staff did not have a clear responsibility. Most of them are managed by thick lines. As a result, both parties lack due restraints. And because of the rural areas in the west, economic conditions are not developed enough, there are relatively few professional popular science talents that can be hired, and the scientific research level is not comparable to large cities. It also caused the development of rural science popularization teams to develop slowly, leading to relatively few popular science staff in the western rural areas; the structure of scientific personnel in different regions is uneven.

### *5.3 Back Behind Rural Science Mechanism*

The influence mechanism has a more obvious impact on rural science popular. First of all, consciousness is not in place. Some fundamental rural leaders cannot recognize the importance of popular science, and the enthusiasm for participating in popularization is not high. Secondly, science popularization funds are insufficient. Inadequate investment in science popularization work, not only popular sciences cannot be carried out normally. When the work is intermittent, the poor systematic, and the results are very small. Finally, the form is single. Popular science work lacks innovation; the

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development form and method are more old-fashioned and low attraction. In addition, it is also facing problems such as the wide range of rural population and poor learning ability of farmers, and it is difficult to work for science popularization to a certain extent.

### *5.4 None Organic Integration of Rural Science Talents in Training, Use, and Evaluation*

First of all, the scientific talent evaluation system is not perfect. It is difficult to effectively confirm the technical ability and academic level of scientific workers, which will seriously affect the enthusiasm of scientific workers. Second, the incentive mechanism is incomplete; the number of people who work in popular science is more enthusiastic, and among them, the number of people who can be competent is relatively limited. Finally, there are still obvious changes and explorations for the science talent evaluation system. The supervision mechanism of the talent market is not complete. There are still many difficulties in concepts, mechanisms, and policies, especially since the popular science work mechanism is incomplete and the operation is not flexible enough. Therefore, many places are unsatisfactory in cultivating and attracting talent.

## 6. Countermeasures to Solve the Problem of Rural Popular Science Talents

### *6.1 Expand the Popular Science Talent Team and Reduce the Gap between the Development of Regions' Popular Science Talents*

Judging from the current status of popular science talents in China, the popular science talent team requires strong professional quality and high business capabilities. Popular science talents greatly affect the improvement of comprehensive scientific and cultural literacy. Especially in the western region, popular science talents are the main forces to improve the scientific quality of the people in the western region. However, from the overall number, there is fewer popular science staff in China's western region, especially compared with the total population. It still cannot fully meet the people's growing scientific and cultural needs, so focusing on cultivating popular science talents is imminent. And based on the current status of popular science talents in China, especially the differences between the east, middle and west, and the differences between economically developed areas and underdeveloped economies and rural areas, we should explore the path of complementary mutual assistance and experience from regional, further narrow the regional gap.

### *6.2 Improve the Quality of Popular Science Talents, Strengthen Capacity Building and Quality Training*

#### *6.2.1 Create the Professionalization and Standardization of Popular Science Talents*

It is necessary to strengthen the professionalization of scientific talents. Create and improve a training system for scientific talent, simultaneously promote the titles of scientific talent, and enhance the sense of belonging and identity of scientific talent.

#### *6.2.2 Strengthen the Capacity Building and Quality Cultivation of Popular Science Workers*

Popular science workers as the main body of popular science content; it is necessary to require your own quality to be strong, and there must be a noble moral sentiment to love popular science work. At the same time, a new era popular science worker should also have good language expression ability and can combine the scientific and interest of popular science content. You can also establish a long-term mechanism for implementing management and protection, strictly put the relevant institutions to issue the establishment and examination of the qualification certificate of science popularization personnel, and improve the professional quality and capabilities of science popularization personnel.

### *6.3 Optimize the Development Channel of Popular Science Talents, Improve the Talent Management System*

(1) Improve the development mechanism for popular science talents. Encourage the construction of popular science talents in various places to carry out diversified exploration and summarize experiences that can be replicated and promoted. At the same time, we must also guide all sectors of society for rural science popularization work, participate in the on-the-job training of popular science talents, and establish a more professional and diversified science talent training system.

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(2) Innovative science talent use mechanism. Study the relevant guidance policies of rural popular science talents. Improve the popular science volunteer system, expanding areas and spaces where volunteers can play a role. At the same time, you can also support more universities and scientific research institutions to set up mobile positions and attract part-time talent in the field of popular science.

(3) Strengthen rural science popularization talent incentive guarantee mechanism. Various types of science talents can be vigorously carried out at all levels and improve the system of combining popular science talent rewards and talent evaluation, use, and salary.

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