Journal of Education and Educational Research
ISSN: 2957-9465 | Vol. 2, No. 1, 2023

Cultivation Strategy of Scientific Spirit

Jing Li, Jie Pan, Xuan Yu, Yanfang Yuan, Xi Wei*, Chen Chen

Shanghai Publishing and Printing College, Shanghai 200093, China
* **Corresponding author**: Xi Wei (Email: weixi0430@163.com)

Abstract: Scientific spirit has a significance for scientific development, the scientific spirit is an important factor of scientific and technological progress. By analyzing the present situation of scientific spirit, this paper puts forward the cultivation strategy of scientific spirit. So as to explore knowledge, seek factual truth, innovate and progress, unite and cooperate, free compete and dedicate. First, the paper described the concept and significance of scientific spirit. And then, the present situation of scientific spirit is introduced through education, research and communication. Finally, scientific spirit is cultivated through four aspects: seeking knowledge spirit, dedication spirit, innovation spirit, and realistic spirit.

Keywords: Cultivation strategy; Scientific spirit; Scientific development.

1. Introduction

The essence of science is to seek truth from facts, reveal the objective laws of development and change of things as they are, and correctly understand and transform the world. The principles of scientific spirit are criticism, creation and practice. First, science is an important means to study and master the objective world, which requires constant pursuit of truth, and truth often appears in the process of fighting against fallacy. Scientific spirit denies blind obedience, superstition, ultimate truth and agnosticism. Secondly, the exploration of unknown areas and objective laws, the creation of new knowledge as an important task, through arduous scientific labor, it is possible to obtain new discoveries, new theories, new laws, scientific achievements are the crystallization of scientific creation. Finally, science comes from practice, and practice tests science. The objectivity of theories, thoughts, assumptions, calculations and opinions requires a realistic judgment of the results, which depends on whether they work in practice. This is the practicality required by the scientific spirit. With the rapid development of modern science and technology, science plays an important role in human society.

By elaborating the connotation of the scientific spirit in the new era and the importance of cultivating the scientific spirit of contemporary college students, Duan [1] deeply analyzed the problems and causes existing in the cultivation of the scientific spirit of the new era college students, and explored the path of cultivating the scientific spirit of contemporary college students in view of the practical difficulties. Sun [2] proposed research on analytical teaching based on the cultivation of scientific spiritual literacy. On the premise of expounding the significance of scientific spirit, Zhang [3] analyzes the current situation of the lack of scientific spirit among college students, and puts forward the practical countermeasures to cultivate the scientific spirit of college students, which is of great significance to the cultivation of the scientific spirit of college students. Liao [4] explored the cultivation path of scientific spirit including training, joint training, task tempering, comprehensive evaluation and multiple incentives. Wang [5] analyzed the inner relationship between scientific spirit and craftsman spirit. Li [6] proposed that scientific spirit is not only the core quality of the subject, but also the internal need and value guidance for the transformation and development of ideological and political courses.

It is necessary to master scientific knowledge and use scientific methods in practice to improve scientific quality and enhance scientific consciousness. Use scientific theories and methods to guide themselves, emancipate the mind, renew ideas, practice boldly, study problems in practice, solve problems, and make innovations. The scientific spirit requires that we attach importance to practice, proceed from reality in everything we do, act in accordance with objective laws, respect and believe in science, and promote the scientific spirit of seeking knowledge through exploration, seeking truth from facts, innovation and enterprising spirit, solidarity, cooperation, free competition, dedication and dedication.

2. Scientific spirit

Science is the ladder of human civilization and progress. From science and technology are productive forces to science and technology are primary productive forces, people have long been deeply aware of the great charm of science. At present, the scientific enterprise vigorous development, the scientific enterprise workers is increasing, a large number of scientific research institution, a think-tank, science education cause swelling, scientific research is also fruitful. Science has increasingly penetrated every field of economy, politics, culture, ecology and life. People have become inseparable from science, rising to the level of national strategy. The competition of science and technology determines the level of national development and the scientific quality of people. However, in today's increasingly important science spirit has some shortcomings. Most people's understanding of science is based on the ideas of pragmatism and utilitarianism, while emphasizing rational scientific tools, but ignoring the scientific spirit. The deficiency of scientific spirit is a common phenomenon, which is explained from the fields of scientific spirit education, scientific spirit research and scientific spirit communication.

2.1. Education

Development and inheritance cannot leave the education career of science, science education have decades of time, including the instruction of scientific knowledge and scientific methods of training, but there are have strong scientific spirit, scientific knowledge is not the same as for a

long time of science education focuses on cramming transfer knowledge content, and promote the scientific spirit aspect, do less, more is the exam-oriented education, Lack of quality education, teaching content is single and one-sided, teachers pass to students is simple existing knowledge. Advocate the implementation of the sea of questions tactics, the use of scores to measure talent, the use of standard answers, lack of divergent possibilities, loss of content and target diversity and creativity, weaken the school's independent innovation and competition, resulting in the lack of independent thinking ability of students. Students' learning activities are completely completed under the urging of school teachers. The task of students is to keep learning, achieve excellent results and be admitted to good schools, thus ignoring the cultivation of scientific spirit.

2.2. Research

Today, scientific research has achieved fruitful results. Generally speaking, scientific research can be divided into two categories: basic research and applied research. In terms of the present situation, the scientific study of the lack of tension, it has something to do with our evaluation system, most of the scientific research with the utilitarian value orientation and evaluation index of the project is how many core journals published and how much is the core journal impact factor, at the same time, a lot of project research is in the nature of the government's directive, a lot of scientific research related to the project funds, The phenomenon of completing projects for the sake of projects. The objective world is complex and changeable, and a lot of studies have great difficulties, which determines that the road of science is rugged and tortuous, and the only thing we can do is not afraid of difficulties and obstacles, bravely climb the heights of science.

2.3. Communication

Science communication refers to the process of two-way communication of science and technology contents, analysis and discussion among main actors under certain social conditions, and it refers to all the processes of exchange, transmission and evaluation of science and technology information. The dissemination of scientific knowledge, scientific thoughts and scientific spirit to the public is a subject that science communication always needs to adhere to. However, the dissemination of science is not equivalent to the dissemination of scientific knowledge. It is relatively easy for science to promote the transformation of the mode of production, but it is very difficult to influence people's ideas. When people understand science from the technical and intellectual level, they regard it as erudite evidence and useful tool. Scientific thought and spirit have not yet fully become the real mass culture. Science communication should help mankind realize the great change of concept and make science become the important source of cultural value. One of the important goals of science communication is to advocate science culture in the whole society.

3. Cultivation Strategy

Based on the understanding and summary of the connotation of scientific spirit, can better cultivate the scientific spirit, this paper from the following four aspects to strengthen the cultivation strategy of scientific spirit.

3.1. Seeking Knowledge Spirit

Cultivating the spirit of seeking knowledge is the main body of scientific spirit and the essence of scientific knowledge system. Scientific activity is a spiritual activity based on exploring, revealing and discovering natural laws. To cultivate the rational spirit of exploration and knowledge seeking, scientific exploration and knowledge seeking originates from human curiosity, transforms into understandable rational spirit, and finally forms the spiritual and intellectual activities of human beings. Science is a magnificent exploration of the human mind is the pursuit and exploration of the unknown world.

3.2. Dedication Spirit

Madame Curie discovered the elements polonium and radium, and promoted scientific progress, but because of frequent exposure to radioactive substances died of illness, dedicated to science. Pavlov said, science requires people to devote their lives to it. Even two lives are not enough. Not afraid of hard work, no return, willing to contribute to science is the highest form of scientific spirit. On the road of scientific exploration and knowledge seeking, they do not care much about personal interests and gains and losses and insist on exploring the unknown world of science.

3.3. Innovation Spirit

The cultivation of innovative spirit is the scientific innovative spirit, the cultivation of critical innovative enterprising spirit is the source of scientific progress, is the soul of national progress, is the inexhaustible driving force for the prosperity of the country, reflects the creativity of scientific production, is the foundation of creative production that constitutes the development of science. Cultivating the enterprising spirit of critical innovation is manifested as reasonable skepticism. Scientists are well aware that, due to the stages and limitations of knowledge, the theory itself may be wrong and needs to be constantly revised. In the history of science, Darwin's doubt and denial of the invariable theory of species led to the biological evolution theory.

3.4. Realistic Spirit

The cultivation of fact-seeking spirit embodies the objective spirit of science and reflects the objective authenticity of scientific standards. It can be explained from the following aspects: First, the spirit of fact-seeking of science requires the use of scientific experiments to test all scientific theories; Secondly, the spirit of scientific fact-seeking establishes the basic position of scientific experiments and empirical materials.

Cultivating cooperative spirit is the guarantee of scientific spirit and reflects the sociality of scientific practice. Throughout the thousands of years of scientific development of mankind, from the great influence of ancient Greek civilization and ancient civilization on modern science to the current network technology, it reflects the inheritance of intellectual relay. In modern times, due to the rapid development of science and the complexity of scientific research objects, the cooperative characteristics of scientific mutual assistance and cooperation are more prominent. All embody the collective wisdom and collaboration of countless scientists.

4. Conclusion

Scientific spirit is of great significance to scientific progress. In the process of scientification, the dissemination and cultivation of scientific spirit will become a trend, which can improve the overall scientific quality and perfect personality of human beings through the cultivation of scientific spirit, so as to promote the overall progress of society. The present situation of scientific spirit is analyzed from three methods: education, research and communication. As the scientific spirit is of great significance to the development of science and technology, we need to pay more attention to the cultivation of scientific spirit. This paper analyzes the strategy to strengthen the cultivation of scientific spirit from the following four aspects: seeking knowledge spirit, dedication spirit, innovation spirit, and realistic spirit.

Acknowledgment

This research is funded by Shanghai Research Institute of Publishing and Media (No. SAYB2205), Shanghai Publishing and Printing College Institute of Higher Education, school ideological and political project of Shanghai Publishing and Printing College, and the first-class professional group construction project for printing media & packaging and information technology, Shanghai Municipal Education Commission.

References

[1] Duan, Q. On the Cultivation of Scientific Spirit of College Students in the New Era. Cultural language and communication, 2021, 30, 24-26.

[2] Sun, Z. Research on Analytical Teaching Based on the Cultivation of Scientific Spiritual Literacy. 2021, Hebei Normal University.

[3] Zhang, Y. Research on cultivation of Scientific spirit in Colleges and universities. Modern Business Trade Industry, 2022, 11, 72-73.

[4] Liao, Y. Thinking and Exploration of Scientific Spirit Training for Staff in Higher Vocational Colleges. The Light & Textile Industries of Fujian, 2021, 07, 16-19.

[5] Wang, Q. Division Soul Originality - The Inner Connection between the Spirit of Science and the Spirit of Craftsmanship. Science & Technology Review, 2021, , 39, 108-112.

[6] Li, H. The Reconstruction of Scientific Spirit in Ideological and Political Course Teaching. Ideology and Politics Teaching, 2021, 11, 19-23.