



Research on the Integration of Scientist Spirit into Ideological and Political Education for Science and Engineering Students

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Abstract. Science and engineering universities are not only the main venues for scientific research activities, but also the main battlefield for cultivating young scientific and technological talents. Integrating the spirit of scientists with ideological and political education in science and engineering universities is beneficial for creating a scientific research environment that respects and advocates science, and for cultivating a large number of high-level scientific and technological talents. The spirit of scientists has become a new research hotspot, but there is relatively little research on the integration of the spirit of scientists into science and engineering universities. Therefore, this article combines the characteristics of the times and the group characteristics of students in science and engineering universities to study the necessity and feasibility of integrating the spirit of scientists into ideological and political education in science and engineering universities, and actively seeks an effective path for integrating the spirit of scientists into ideological and political education in science and engineering universities.

Keywords: Scientist spirit; ideological and political education; Science and Engineering Students

1 Introduction

On the journey of pursuing dreams for the great rejuvenation of the Chinese nation, there is a group of people who have bravely climbed the peak of science, always dedicated to their motherland and dreams [1]. Despite the mud and twists and turns on their way forward, they are fearless and fearless. They "cast iron to make steel" in their willpower, and "keep walking" on their way forward, making significant contributions to the progress of science and technology, the improvement of the quality of life of the people, and the development of the nation [2]. As one of the spiritual pedigrees of the CPC, "scientist spirit" has profound spiritual connotation and lofty ideological quality. The achievement of scientific and technological achievements cannot be achieved

without the support of spiritual power. Currently, China has entered the ranks of innovative countries and is constantly advancing towards the goal of becoming a technological powerhouse. Therefore, more than ever before, we need to promote the spirit of scientists and create a favorable environment for technological innovation. Science and engineering universities are not only the main venues for scientific research activities, but also the main battlefield for cultivating young scientific and technological talents. Integrating the spirit of scientists with ideological and political education in science and engineering universities is conducive to creating a scientific research environment that respects and advocates science, cultivating a large number of high-level scientific and technological talents, and enriching the channels for promoting the spirit of scientists [3].

With the occurrence of the Industrial Revolution in modern Britain, some sociologists and philosophers have gradually focused their attention on research related to science, scientific spirit, and the spirit of scientists. American sociologist Merton proposed that universalism, publicism, selflessness, and organized skepticism are the consistent spiritual temperament and behavioral norms followed by the community of scientists [4-6]. They believe that these four spiritual qualities are the spiritual commonalities of the scientific community and are equivalent to the spiritual qualities of science. There is no concept of "ideological and political education" abroad, but there are similar concepts such as "national education", "moral education", and "legal education". Foreign scholars have relatively little research on the spirit of scientists, but they have rich theoretical research and practical experience in cultivating students' scientific literacy and improving scientific spirit. These contents provide reference for how to promote and promote the spirit of scientists in China in the new era, and how to integrate the spirit of scientists into ideological and political education in science and engineering universities.

At present, research on the spirit of scientists in China is mainly divided into the following categories. 1: Research on the spiritual connotation of scientists; 2: Analysis of individual cases of scientist spirit; 3: Research on the image of scientists; 4: Research on ways to promote the spirit of scientists[7]. The research on ideological and political education in science and engineering universities mainly includes the following aspects: 1. Research on the characteristics of students in science and engineering universities; 2: Research on the construction of "curriculum ideological and political education" in science and engineering universities; 3: Research on the Current Situation of Ideological and Political Education in Science and Engineering Universities[8-10]. The problems of ideological and political education in science and engineering universities mainly include the following aspects: firstly, from the perspective of ideological and political theory courses, the theoretical nature of the courses is not strong, there is less vocational guidance, the educational model is single, and the practicality is not strong; Secondly, from the perspective of ideological and political education environment, compared with comprehensive universities and teacher training universities, science and engineering universities lack a humanistic environment and cannot form a comprehensive education pattern.

At present, some achievements have been made in the research on the spirit of scientists and ideological and political education in science and engineering universities,

but there is still much room for improvement and supplementation. Therefore, this paper will draw on existing research results, combine the characteristics of the times and the group characteristics of students in science and engineering universities, and actively seek an effective path for integrating the spirit of scientists into ideological and political education in science and engineering universities.

2 The Current Situation of Integrating the Spirit of Scientists into the Ideological and Political Education of Science and Engineering Students

In order to understand the current research status of this topic, we conducted a questionnaire survey using a combination of online and offline methods. A total of 485 questionnaires were collected, of which 481 were valid. As shown in Figure 1 below, the attitudes of students with different political backgrounds towards the spirit of scientists were analyzed. Through analysis, it was found that there were significant differences in the attitudes of students with different political backgrounds towards the spirit of scientists.

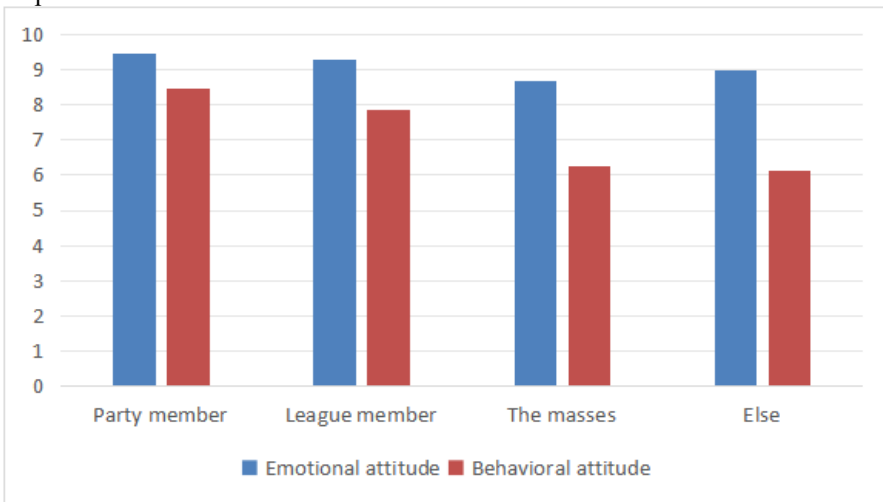


Fig. 1. Comparison of Attitudes towards Scientist Spirit among Students with Different Political Faces

By using the independent sample P-test method to statistically analyze the mean scores of college students from different school types towards the attitude towards scientist spirit, it can be concluded that there is no significant difference in the scores of students from different schools towards scientist spirit in three dimensions: cognitive attitude, emotional attitude, and behavioral attitude.

Table 1. Attitudes of Different Types of Students towards Scientist Spirit

Variable	School	Number	Mean value	Standard deviation	F	P
Emotional attitude	Science and engineering students	398	9.11	0.47	3.458	0.854
	Science and engineering students	83	9.07	0.54		
Behavioral attitude	Science and engineering students	398	8.54	0.69	0.077	0.205
	Science and engineering students	83	8.68	0.67		

As shown in Table 1, there is no significant difference in the emotional and behavioral attitudes towards the spirit of scientists among students of different types and majors. From the research results, it can be seen that science and engineering universities are increasingly valuing the spirit of scientists, and students have a high level of identification with the spirit of scientists. However, through research, it was found that the current method of integrating the spirit of scientists into ideological and political education in science and engineering universities is relatively single, and the integration effect is not significant.

3 The Path of Integrating the Spirit of Scientists into the Ideological and Political Education of Science and Engineering Students

Universities should establish a sound incentive mechanism to encourage teachers and students to become advocates and practitioners of the spirit of scientists. Firstly, we need to strengthen and increase the work of evaluating excellence and excellence. Commend outstanding representatives of teachers and students in promoting and practicing the spirit of scientists, and provide them with spiritual and material rewards. Secondly, increase the publicity efforts for recognition activities. We should make full use of campus media for promotion, and make every teacher and student aware of the commendation activities as much as possible, actively participating in the commendation activities.

3.1 Integrating the Spirit of Scientists into Classroom Teaching

To integrate the spirit of scientists into ideological and political theory courses, it is necessary to integrate it into the teaching design of ideological and political courses. Instructional design refers to the systematic activity of organizing teaching content and resources, designing teaching activities and learning environments based on the char-

acteristics of specific learners under the guidance of teaching concepts, and ultimately supporting learners in effectively achieving learning goals.

3.2 Integrating the spirit of scientists into practical activities

Practice is the only criterion for testing truth. By integrating the spirit of scientists into practical activities both inside and outside the classroom, we can enhance our understanding of the spirit of scientists, learn to view it in a dialectical way, and integrate the core of the spirit of scientists into our daily learning and life. Science and engineering universities should provide students with diverse internship bases in order to cultivate their practical and scientific research abilities, as well as the spirit of seeking truth and innovation as scientists.

3.3 Integrating the Spirit of Scientists into Campus Culture Construction

By integrating the spirit of scientists into the construction of campus culture, every college student involved can be subtly influenced by the spirit of scientists in terms of ideology, value orientation, and other aspects. Integrating the spirit of scientists into the construction of campus network culture is an inevitable choice for promoting the spirit of scientists in the new era.

4 Conclusion

Through research on the spirit of scientists and the related content of ideological and political education in science and engineering universities, it has been found that the integration of the two is necessary. At the same time, through research, it has been found that the integration of the spirit of scientists into ideological and political education in science and engineering universities has achieved certain results, but there are many shortcomings. Through empirical research, this article proposes several ways to integrate the spirit of scientists into ideological and political education in science and engineering universities, It has certain reference significance for ideological and political education in science and engineering universities.

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