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Research and Practice on the Training Mode of Innovative and Entrepreneurial Talents in Colleges and Universities: A Case Study of Academic Association of "Federation of Life Science Research and Innovation"

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Abstract Taking the academic association of the Federation of Life Science Research and Innovation of the College of Life Science and Biotechnology of Heilongjiang Bayi Agricultural University as the research platform, it is necessary to organically combine personalized education with the cultivation of innovative and entrepreneurial ability. On the basis of unified teaching ideas, we should pay attention to the individual differences of educational objects, eliminate the disadvantages of traditional education, and break the conventional "spoon-feeding" teaching mode. It is necessary to shift from only paying attention to one-way indoctrination to paying attention to the cultivation of students' innovative quality, and to enhance students' interest in scientific research and practical ability of innovation and entrepreneurship through the rich scientific research activities of academic associations.

Key words Federation of Life Science Research and Innovation, Academic association, Colleges and Universities, Training mode of innovative and entrepreneurial talents

1 Introduction

College students' association is an indispensable carrier for the construction of campus culture in colleges and universities in China, which is called the second classroom in colleges and universities. All kinds of associations attract the broad masses of students to participate actively in a variety of activities, which effectively stimulate the enthusiasm of students to participate. The academic association is a student association which aims to improve the professional application ability and the quality of personnel training by carrying out various forms of academic activities around the professional core courses to effectively make up for the shortcomings of the current classroom teaching. It is the extension of the first classroom in colleges and universities^[1]. The Federation of Life Science Research and Innovation, established in October 2015, is an undergraduate research-oriented academic association jointly established by a number of comprehensive laboratories under the College of Life Science and Biotechnology of Heilongjiang Bayi Agricultural University. The association mainly focuses on rich and colorful scientific research activities, with practical, innovative and academic characteristics, and has senior professors who have been engaged in front-line teaching and scientific research for a long time and have rich teaching experience and theoretical basis. Based on the scientific research interest of

each member of the association, it formulates its corresponding scientific research plan, so as to improve the students' awareness of the majors and master more professional knowledge and related experimental skills, and create a strong academic atmosphere for scientific research. The academic association of "College of Life Science and Biotechnology of Heilongjiang Bayi Agricultural University" has trained a number of outstanding innovative talents for the school, and laid a solid foundation for promoting the development of life science.

2 Present situation and existing problems of the cultivation of college students' innovative ability

The cultivation of college students' innovative and entrepreneurial ability is the driving force for students to actively acquire knowledge^[2]. College students without a good sense of innovation and entrepreneurship are difficult to adapt to the development of association. Compared with the teaching by personal example as well as verbal instruction in the classroom, rich practical activities can cultivate students' innovative ability. Academic associations make students participate in scientific research and social production practice earlier, so that quality education can be further promoted to innovative education, to finally achieve the goal of improving comprehensive quality^[3].

Academic associations in colleges and universities in China have experienced a long process of development, but at present, there are still many problems and deficiencies in the development of academic associations in colleges and universities, such as lack of learning autonomy, weak sense of innovation and poor problem-solving ability, and the level of instructors to be improved.

2.1 Students' enthusiasm for innovation and entrepreneurship education is not high Although college students are more

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interested in the activities of innovation and entrepreneurship education held by the school, they will participate in some academic association activities by virtue of their own interests. However, college students who are used to passively accepting book knowledge lack the consciousness of active thinking and innovation, lack high degree of participation in scientific research practice, and lack the spirit of questioning and challenge^[4]. In addition, for the innovative educational practice activities organized by the school, 80% of the students said that they occasionally participated or even did not participate, and with the increase of their time invested in academic associations, some students had poor ability to resist pressure and would flinch when they encountered difficulties in practical activities, and their enthusiasm for participating in the activities was getting lower and lower.

2.2 The scientific research guidance level of some teachers needs to be improved At present, the innovative consciousness of university teachers in China is not strong, and it is difficult to meet the needs of cultivating innovative talents. As a kind of voluntary organization, academic association has a certain degree of spontaneity and blindness^[5]. Therefore, teachers in colleges and universities should intervene and guide them appropriately. For example, due to the particularity of the academic association itself, it is necessary to select instructors with a certain academic level and innovative ability to guide the academic association. However, due to the limited academic level of guidance teachers and the influence of the traditional concept of employment, most teachers focus on employment education, as a result, some students have a sense of innovation and entrepreneurship, but they are unable to get strong support from their parents and teachers, which has a negative impact on the cultivation of students' awareness and ability of innovation and entrepreneurship^[6].

3 Role of "Federation of Life Science Research and Innovation" in college students' innovation and entrepreneurship education

The 17th CPC National Congress put forward the development strategy of "improving the ability of independent innovation and building an innovative country". Cultivating innovative talents has become an important strategic goal of colleges and universities^[7]. In response to the national policy, the instructors of the College of Life Science and Biotechnology of Heilongjiang Bayi Agricultural University have paid close attention to and attached great importance to the innovation and entrepreneurship education of college students in recent years. At present, the "Federation of Life Science Research and Innovation" has achieved remarkable results, and has won many honors, such as "college's three-star association", "college's five-star association", "college's excellent association", and "best contribution award of college association". It has laid the foundation for the further improvement of the association and the promotion of college students' innovation and entrepreneurship education.

3.1 Advantages and disadvantages of college students' academic association and the role of academic association in college students' innovation and entrepreneurship education As the most extensive group in the student organization, the association is composed of like-minded college students, which has the characteristics of strong voluntariness, universality, practicality and so on. In the survey object of college students' innovation and entrepreneurship, it can best represent the opinions and suggestions of the majority of students. The association is an important carrier of the "second classroom" in colleges and universities, especially the strong academic atmosphere created by the scientific research community, has played an irreplaceable role in the cultivation of college students' scientific research and innovation ability.

Academic associations regularly invite experts from inside and outside the school to give lectures on special topics to introduce the latest achievements in the field of science, to broaden students' horizons and stimulate students' desire for innovation. Students exercise their thinking ability, coordination ability and overall awareness in the planning, organization and development of the lecture. Academic associations have the advantage of carrying out scientific research projects, which can be combined with the results of the associations for active college students' innovative and entrepreneurial project application, and some members with a good basic level of scientific research can directly participate in scientific research projects organized by teachers and undertake the research of sub-project. At the same time, the academic association in colleges and universities, as one of the important carriers for students to expand their professional knowledge, increases the influence of the association and guides the healthy development of the academic association^[8].

3.2 Practical exploration on the cultivation of college students' innovative and entrepreneurial ability The main feature of cultivating innovative talents in colleges and universities is to make students have innovative quality, innovative thinking and innovative ability. Compared with the traditional single classroom teaching model, the scientific research platform constructed by the Federation of Life Science Research and Innovation of College of Life Science and Biotechnology of Heilongjiang Bayi Agricultural University has significantly improved the practical ability of college students and their ability to integrate professional knowledge, and also strengthened the ability of college students to find and solve problems. In the scientific research platform built by the Federation of Life Science Research and Innovation, the association will organize a study exchange public lecture once a week, which requires students to systematically report on the progress of their experiments. Through the report, it can not only test the students' experimental progress, but also improve the language organization ability and expression ability of college students. The study report can be the results of recent experiments conducted by students, or the most cutting-edge and attractive contents in the literature at home and abroad can be shared with everyone. This way can not

only improve students' autonomous learning ability, but also open up scientific research ideas and lay a solid foundation for future scientific research or employment. At the same time, teachers should pay attention to teaching students in accordance with their aptitude, give priority to putting forward targeted suggestions and opinions, and fully mobilize the enthusiasm of students. In addition, the activities should take students as the main body of practice, in order to comprehensively enhance the innovative and entrepreneurial ability of college students. At present, the establishment of "Federation of Life Science Research and Innovation" has significantly improved students' comprehensive practical ability and scientific research literacy, and played an important role in the personalized development of college students.

4 Conclusion

In the course of operation, the academic association of the Federation of Life Science Research and Innovation of the College of Life Science and Biotechnology of Heilongjiang Bayi Agricultural University is fully based on its own situation to give full play to the personality of the association, aims at cultivating college students' innovative ability, practical ability and entrepreneurial spirit, relies on the majors and serves the majors, creates a good style of study and strong academic atmosphere, strengthens the students' team consciousness, and provides a new platform for the school to realize the new development path of "industry-university-

research".

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