

Research on "Three-dimensional" Training Mode of Innovative Talents in Agriculture and Forestry Economic Management Specialty

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Abstract

In the process of cultivating innovative talents, agricultural and forestry economics and Management major has some problems, such as lack of distinctive school-running characteristics, traditional teaching mode and lack of innovative practice platform. Taking the "Three-dimensional" training mode of innovative talents in Agriculture and Forestry Economics and Management major of Guizhou University as an example, this paper expounds the new training mode of innovative talents in agriculture and forestry economics and management major, aiming to provide reference and inspiration for the training of innovative talents in other universities.

Keywords

"Three-dimensional" Training Mode; Agriculture and Forestry Economy Management; Innovation; Talent Training.

1. Introduction

Agriculture and forestry economic management specialty is a characteristic specialty serving the field of agriculture, rural areas and farmers, and it is an important discipline to promote the modernization of agriculture and rural areas and the high-quality development of agriculture and rural economy in China. Strengthening the cultivation of talents' innovative ability of agricultural and forestry economic management specialty, and serving for the governance of relative poverty and rural revitalization are the current important tasks. Talent is the primary resource to realize the great rejuvenation of the Chinese nation and the prerequisite for innovation [1]. The general secretary clearly emphasized at the National Education Conference that "education guides students to cultivate comprehensive abilities and innovative thinking." Therefore, taking the cultivation of innovative talents of agriculture, forestry and economic management major in Guizhou University as an example, this paper discusses the cultivation of innovative talents from four dimensions: professional courses, teachers' studios, school experimental platforms and practice bases, in order to accumulate experience and promote the cultivation of innovative talents of agriculture, forestry and economic management major in China.

2. The Problems Existing in the Cultivation of Innovative Talents in Agriculture and Forestry Economic Management Major

Influenced by the traditional Chinese talent training mode, the teaching mode of talent training in agriculture and forestry economics and management major basically follows the "indoctrination" teaching mode, and the professional knowledge learning is one-sided, which leads to the students' single knowledge structure, simple thinking mode and lack of training of independent thinking and innovation ability. Therefore, how to break through the traditional

teaching mode and cultivate innovative talents for agriculture, rural areas and farmers who meet the needs of social development and have sustainable competitiveness is an urgent problem for the development of China's agriculture, forestry and economic management major. It is not difficult to find out through induction that there are the following shortcomings in the process of cultivating innovative talents in China's agriculture and forestry economic management major.

2.1. Imperfect Curriculum Construction

A complete curriculum system and distinctive school-running characteristics are the important guarantee for the development of disciplines and the cultivation of outstanding talents. At present, the curriculum system and school-running characteristics of agriculture, forestry and economic management major in most Chinese universities still need to be optimized. On the one hand, at present, the training mode of talents majoring in agriculture, forestry and economic management in most colleges and universities is still similar, and the training objectives are too "unified" by using the nationally unified textbooks and unified curriculum planning and offering the same professional courses; On the other hand, the curriculum lacks flexibility, the setting of adjacent disciplines and interdisciplinary disciplines is not enough, and it mainly focuses on theoretical study, and the social practice courses are relatively lacking, and the talent training objectives are not well formulated in combination with their own resource advantages and regional development needs, and the school-running characteristics are not distinctive [2].

2.2. Teaching Mode and Method are More Traditional

Innovation is the creative intention and desire of human beings, and the internal driving force and starting point of creative practice [3]. At present, some colleges and universities still adopt traditional teaching methods and modes, focusing on teachers and theoretical knowledge, which makes students majoring in Chinese agriculture, forestry and economic management accustomed to indoctrination learning and produce learning dependence [4]. Lack of training in independent thinking and innovation ability, weak sense of innovation and weak innovation ability. Such a teaching mode is not conducive to arousing students' learning enthusiasm, and even less conducive to cultivating students' innovative thinking and ability.

2.3. Weak Scientific Research Foundation and Lack of Innovation Platform

Research needs the support of theoretical knowledge and social practice. Compared with science and engineering majors and other social science majors, the education scale of agriculture and forestry economic management majors is small, there are fewer colleges and universities, and most of them are ordinary undergraduate colleges, and the scientific research foundation is relatively weak. Social practice is an important way to cultivate students' innovative spirit and ability. The cultivation of innovative talents can't be limited to the study of classroom knowledge, but also needs to combine theoretical knowledge with social practice. At present, compared with other disciplines, the major of agriculture, forestry and economic management lacks innovative carriers such as practice bases, innovation and entrepreneurship centers and innovation laboratories [5].

3. Concept and Practice of "Three-dimensional" Training Mode for Innovative Talents

Innovation is an inexhaustible motive force for a country's prosperity. Since the beginning of the new century, with the rapid advancement of China's modernization process, the demand for innovative talents is increasing. In recent years, the agriculture and forestry economic management major of Guizhou University has been optimizing the new talent training

mechanism of "Industry-University-Research integration", and through continuous practice and exploration, it has successfully built a "Three-dimensional" training mode for innovative talents. The model consists of four key links: professional curriculum system, teacher's studio, school experimental platform and practice base. As shown in Figure 1, the four key links do not exist in isolation, but complement each other and depend on each other. First of all, students need to systematically study professional curriculum knowledge, accumulate subject knowledge and related theories, and prepare for scientific research and innovation; The second step is to discuss and communicate with each other in the teacher's studio on the issues under study through the study of professional knowledge and related theories, and combine theoretical knowledge with practical problems to form academic issues with research significance. At the same time, the teacher will improve students' subject knowledge and academic frontier again by combining his own research practice and knowledge of subject frontier issues. The third step is to forecast and debug the research scheme and design through the school experimental platform, and check the preliminary research results, so as to make the research more reasonable and feasible; The fourth step is to apply the successful research scheme and design in the experimental platform to the practical base; At the same time, the data obtained through research and practice are screened and processed in the laboratory platform, and the results are analyzed and discussed in the teacher's studio, and finally the academic problems with innovative and research significance are formed, so as to improve students' innovative ability and practical ability.

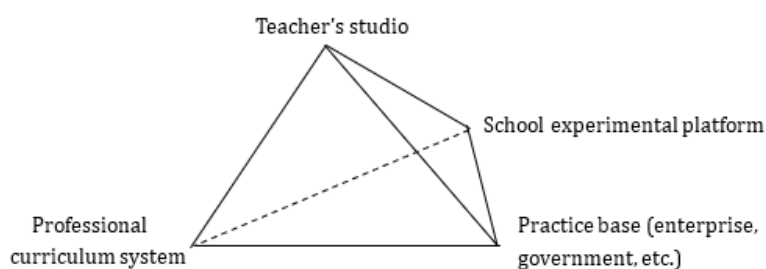


Fig 1. Schematic diagram of "Three-dimensional" training mode for innovative talents

3.1. Precise Professional Curriculum System

Cultivating innovative talents is an important goal of first-class discipline construction in first-class universities, and the cultivation of innovative talents needs the support of the corresponding professional curriculum system. Specifically, under the guidance of innovative ideas, all components of the curriculum are rearranged and combined to improve students' basic theoretical knowledge and core abilities such as independent innovation and self-development. At present, in view of the problems of conservative curriculum system structure, insufficient awareness of curriculum integration and innovation, and indistinct school-running characteristics, the Three-dimensional training model of innovative talents of agriculture, forestry and economic management major in Guizhou University has set up a professional curriculum system to promote the cultivation of innovative talents. On the one hand, optimize the professional curriculum system, rationally optimize the class allocation of five modules in the curriculum system, such as public courses, basic courses, compulsory courses, elective courses and practical courses, and reasonably increase the proportion of professional courses and practical courses to improve students' professional quality and practical ability; At the same time, according to the needs of professional research, we should expand certain related knowledge for the interdisciplinary and adjacent disciplines such as economics, statistics, management, etc. so as to lay a solid foundation for students' study and research, and improve students' ability to apply knowledge and innovate and create. On the other hand, under the

condition that professional basic courses and professional compulsory courses remain unchanged in the training program, diversified and multi-directional professional elective courses are offered, and various optional courses such as information technology and innovation technology are appropriately added. For example, the postgraduates majoring in agriculture, forestry and economic management in Guizhou University offer courses such as "Technology Innovation Management"; At the same time, according to the characteristics of the school and the needs of regional development, corresponding compulsory or elective courses can be offered. For example, Guizhou Province belongs to the poverty-stricken areas in western China and the only karst mountain province in China, and the specialty of agriculture and forestry economic management of Guizhou University has set up special courses such as "Theory and Practice of Poverty Alleviation and Development in Karst Areas" and "Mountain Agriculture Development". By optimizing the curriculum system, students are encouraged to organically combine professional knowledge with innovative knowledge, so as to improve students' comprehensive quality and innovative ability, effectively link talent cultivation with regional characteristics and promote local economic and social development.

3.2. Teacher-student Cooperative Teacher Studio

"Teacher-student cooperation" is a teaching form of teacher's studio system, which means that in the open teacher's studio, the studio members including teachers analyze and discuss the cutting-edge issues and professional knowledge of the subject, and explore together, and at the same time, teachers combine their own research practice and knowledge of cutting-edge issues of the subject to improve students' subject knowledge and academic cutting-edge again. Teachers' studios create a good scientific research atmosphere for students, and provide academic exchange platforms for members. Students and teachers, students and students can exchange and discuss with each other. Through various academic seminars, students' academic innovation ability and problem analysis ability can be improved. Innovative teacher studio teaching mode emphasizes the combination of "going out" and "bringing in", On the one hand, it emphasizes integrating theory with practice, organizing students to go out for investigation and investigation, broadening their horizons, improving students' ability to practice and find problems, etc. On the other hand, it pays attention to academic exchanges and dissemination of cutting-edge knowledge, such as inviting well-known experts and scholars in the field to give academic lectures, and exchanging advanced experience and cutting-edge knowledge of disciplines, so as to improve students' comprehensive quality and academic vision. Since 2014, the major of agriculture and forestry economics and management in Guizhou University has set up a "teacher's studio" and established the working principle of "mentor's guidance, students' mutual assistance, combination of teaching and research, innovation". The innovative teaching mode has achieved remarkable results in cultivating talents, and created a large number of outstanding innovative talents.

3.3. Open and Inclusive School Experiment Platform

School experimental platform is an important base for scientific research and teaching in colleges and universities, and the construction of first-class universities and disciplines cannot be separated from the support of first-class experimental platform [6]. School experimental platform plays a very important role in education, teaching and scientific research experiments, shouldering the heavy responsibility of practical application of knowledge and knowledge development and innovation, and is the cradle of innovative talents. "Three-dimensional" training mode for innovative talents the school experimental platform is based on discipline construction, serving teaching and scientific research, devoting to academic innovation and cultivating students' innovative ability, and establishing an open and inclusive innovative experimental platform. The main tasks of the laboratory platform include testing the preliminary research results formed in the teacher's studio (Such as the prediction and analysis

of the preliminary research plan, the rationality test of the survey questionnaire, the simulation test of research design, etc.) and analyzing and processing the data needed by the research. On the one hand, through the problem detection of the experimental platform, it can better help researchers to improve the deficiencies in the research scheme and design, thus improving the feasibility and rationality of the research scheme and design; On the other hand, the research data can be analyzed and processed through the experimental platform, which can clearly reflect the differences of various indicators, help researchers better analyze problems and help scientific research.

3.4. Collaborative and Innovative Student Practice Base

It is an important link in the process of cultivating innovative talents, and the main way to improve practical ability and innovative ability [7], Practice base is an important platform to cultivate college students' innovative ability, practical ability and employability. Innovative talent "Three-dimensional" training mode builds innovative student practice base of "school-enterprise collaboration" according to the goal of talent training, integration of production and education and win-win situation. Enterprises give support to professional technology, practice base and scientific research resources in colleges and universities, while enterprises rely on university laboratory resources and talent resources to better enhance their product research and development ability. Students can better apply theoretical knowledge to practical activities and promote students' knowledge application ability and knowledge application ability through practice and research in practice base. The construction and operation of the innovation base not only improves the teaching quality of colleges and universities and the training ability of innovative talents, but also enhances students' professional skills and innovative practical ability. At the same time, it also promotes the technological progress of enterprises, reduces the cost of human resources of enterprises and enhances the competitiveness of enterprises. The innovative joint training mechanism of "school-enterprise cooperation" integrates various resources well, and realizes the complementary advantages and mutual benefit of schools, students and enterprises. Guizhou University School of Economics has established and improved the operating mechanism of off-campus practice bases, and made great efforts to create innovative practice bases with school-enterprise cooperation. Now, more than 20 kinds of practice bases including local governments, enterprises and cooperatives have been built, with remarkable cooperation results, which has promoted the cultivation of innovative talents in schools and provided intellectual support for enterprise development.

4. Practical Results of "Three-dimensional" Training Mode for Innovative Talents

4.1. Improve Students' Academic Innovation Ability

The "Three-dimensional" training mode of innovative talents has promoted the cultivation of high-quality talents of agriculture, forestry and economic management major in Guizhou University. In recent years, graduate students and undergraduates majoring in agriculture and forestry economics and management in Guizhou University have made great achievements in academic innovation and creation, and the quantity and quality of academic papers published in various authoritative journals at home and abroad have been greatly improved. Periodicals that publish papers "include China's Rural Economy", "China rural survey", "Agricultural Technology Economy", etc. Students actively participated in various academic forums and conferences, and won many awards for various activities. In the past five years, the winners of some outstanding students are shown in Table 1.

Table 1. List of winners of some outstanding students

serial number	name	Award name	Award winning time (Year)	grade
1	L. Qian	The First Top Ten Young Agricultural Scholars in China	2016	national level
2	L.Y.Zheng	The Second Top Ten Young Agricultural Scholars in China	2017	national level
3	F.H.Li	The 4th Excellent Academic Paper Award of Lin Zengjie Land Science Development Fund	2021	national level
4	L.Lou	Outstanding Paper Award of Guiyang International Forum on Ecological Civilization in 2021	2021	national level
5	D. Y. Pan, N. Hong	The second "Fei Xiaotong Field Investigation Award" essay writing activity paper award	2018	national level
6	L.Lou, J.Long	The Third Excellent Academic Paper Award of Lin Zengjie Land Science Development Fund	2020	national level
7	X.Z.Zhang	"My Youth, Guizhou Land" College Teachers and Students Appraisal Essay Activity	2020	Provincial level
8	X.Y.Liu	"My Youth, Guizhou Land" College Teachers and Students Appraisal Essay Activity	2020	Provincial level

The successful implementation of the "Three-dimensional" training mode of innovative talents in the major of agriculture and forestry economics and management in Guizhou University has promoted the training of a large number of outstanding talents in academic innovation and creation.

4.2. Improving Students' Employability

Since the implementation of the "Three-dimensional" mode of cultivating innovative talents, the professional skills, innovative ability and comprehensive quality of the students majoring in agriculture and forestry economics and management in Guizhou University have been continuously enhanced, and the employment rate of the students has been greatly improved on the original basis. Since 2016, the employment rate has reached more than 96% for five consecutive years. The graduates have strong overall strength and high quality, and are well received by various employers. After employment, the students quickly grow up and adapt, and some graduates have grown into outstanding talents in the industry and core members of the unit. Students' professional knowledge and skills are highly compatible with their practical work, and their employment directions are diversified. Their graduation destinations mainly include government agencies, institutions, colleges and universities, financial institutions, research institutes, etc. Some students go deep into the grassroots level and take root in the earth, contributing to the great cause of rural revitalization in China.

4.3. Discipline Strength is Constantly Increasing

The implementation and promotion of the "Three-dimensional" training mode for innovative talents not only made students and trained a large number of outstanding talents, but also promoted the development of disciplines and improved the overall teaching and research level of the college. After several years' development, the discipline strength of agriculture and

forestry economic management specialty has been continuously enhanced, and its scientific research achievements have been remarkable. It has been successfully selected as the first-class construction discipline in Guizhou Province (the only liberal arts discipline in the province), the specialty with national characteristics, and the provincial key discipline in Guizhou Province. In 2019, it ranked 12th in the education ranking of agricultural economic management specialty, which was greatly improved compared with the 32nd in 2008. In the past five years, the discipline team has presided over more than 20 national-level projects, with funding of nearly 6 million yuan and accumulated research funding of more than 23 million yuan. Nine research achievements won the first and second prizes of provincial social science achievement awards, and published more than 200 high-quality papers and 26 books. The successful implementation of the "Three-dimensional" training mode of innovative talents to other majors in the college has promoted the development of other majors and further improvement of the quality of talents training, and also has a certain role in promoting the overall teaching and scientific research level of the college.

5. Conclusion and Enlightenment

Guizhou University's agriculture and forestry economics and management major has innovated in innovative talent training mode, and the talent training effect is remarkable, which provides important enlightenment for other universities' agriculture and forestry majors to effectively train innovative talents.

5.1. To Serve the National Strategy and Regional Development as the Development Goal

National demand has always been the constant theme of talent cultivation in colleges and universities. The development orientation and talent cultivation objectives of agriculture and forestry majors in colleges and universities should be deeply integrated with the rural revitalization strategy [8]. Specialty construction should focus on the national rural revitalization strategy and the needs of regional economic and social development, so that the talent training objectives can be in line with the development of the times and meet the social needs. While actively responding to the national strategy, we should combine the advantages and characteristics of agricultural and forestry majors in colleges and universities with the regional social and economic development, so as to match the scale and quality of personnel training, actively promote the seamless connection between personnel training and national strategy and regional development needs, and cultivate innovative, compound and practical outstanding agricultural and forestry talents.

5.2. Pay Attention to the Improvement of Teachers' Level and Education Quality

During the inspection in Tsinghua University, the general secretary pointed out: "Teachers are the backbone of education. Without high-level teachers, it is difficult to cultivate high-level innovative talents and produce high-level innovative achievements." Teachers' team building is the key to improve the quality of education and teaching, cultivate high-level innovative talents and produce high aquatic innovation achievements. To strengthen the construction of teaching staff, we can start from two aspects: on the one hand, colleges and universities should strengthen teachers' training and study, and build a scientific teacher training and assessment system, so as to continuously improve teachers' professional quality and comprehensive quality; Carry out high-quality academic forums and lectures, and exchange and discuss with famous scholars of the same trade on the frontier issues of disciplines, so as to improve teachers' academic horizons and academic frontiers; On the other hand, colleges and universities can employ industry experts and professional technicians as part-time teachers

through joint training, school-enterprise cooperation, etc., so as to supplement the professional teacher team in schools, aiming at improving the level of teachers and the quality of personnel training and education in colleges and universities.

5.3. Construct a Reasonable Training Mechanism

The new innovative talent training mechanism of "school-enterprise cooperation" is an effective mechanism to promote the integration of production and education and achieve win-win results. Taking the joint training of innovative talents as an opportunity, we can build a school-enterprise joint talent training mechanism. Through students' practical activities in enterprises, schools can quickly and accurately understand the talent needs of enterprises and society, train talents according to social needs, improve the reliability and validity of high-level talent training to meet job requirements, and promote the reform and innovation of colleges and universities and improve their own functional orientation. Students' practical tests and exercises in the practice base of school-enterprise cooperation can enhance their scientific research and innovation ability and practical application ability, and accelerate their growth into high-level innovative talents needed by enterprises and society. With the help of talents and scientific research resources in colleges and universities, it is easier for enterprises to obtain intellectual support in related fields and solve technical problems faced by enterprises. Through joint talent training, it is convenient for enterprises to reserve talents according to their own needs and promote their core competitiveness. Implement the strategic alliance between schools and enterprises, form a pattern of complementary advantages and win-win for all parties, and realize their extraordinary leapfrog development [9].

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