Study on the innovative informatization talents cultivation of modern urban agriculture

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Abstract: Based on modern urban agricultural construction, the innovation education idea is run through the activities of teaching and scientific research innovation practice of computer professional students, which will greatly promote the agricultural informatization in the cultivation of innovative talents. According to the daily teaching and the actual situation of the scientific innovation practice guidance, the author discuss how to through scientific and technological innovation, focus on strengthening the comprehensive skills of students majoring in computer science, culture innovation information science and technology talent of modern urban agriculture, and service the new rural construction.

1 The rapid development of the construction of modem urban agriculture urgently needs of innovative information science and technology talents

Entered in twenty-first Century, China's information agriculture, intelligent agriculture, urban agriculture are becoming more and more mature[1-3], and all of this are taken the computer technology as the carrier of promoting the process of agricultural modernization[4-8]. Therefore, the technological innovation talents with organic combination of traditional agriculture and modern computer will be the main force in the construction of urban modern agriculture, promoting the development of agricultural modernization[9-10].

1.1 Analysis of modern urban agriculture informationization construction technology development status

Informationized agriculture science and technology innovation in China started in 1960. Until now, development speed is increased gradually. During “10th Five-year Plan" period, innovation in science and technology of Internet platform application as feature; “11th Five-year Plan" was marked with innovation of science and technology of low cost information terminal application; "12th Five Year Plan" was using scientific and technological innovation of mobile internet terminal application as the mainstream. So far has made great progress in the agricultural natural resources data processing, management of agricultural information and extension services, agricultural planning and decision-making, agricultural production process in real-time processing and control, artificial intelligence expert system development and application, information network research and construction.

At present, the trend of agricultural informatization science and technology innovation began to appear six changes: one is to change the focus from infrastructure construction to the integration of resources; two is application of terminal development starting from the traditional terminal to the efficient and convenient intelligent terminal; three is the information industry began to shift from the information technology innovation of single link to information technology innovation of whole industry chain; four is beginning to change from single information technology innovation to the integrated technology innovation; five, the agricultural science and technology information service means begin the change from traditional single approach to harmonized, accurate, personalized, visual, intelligent direction; six is in innovation mechanism, from the initial composition of scientific research institution as main parts, the state invested, change to the composition of enterprise as the main part, combination involving production, the State invested with paid.

1.2 Analysis of the information technology development trend in construction of modem urban agriculture.

The construction of modern urban agriculture innovative information technology generally showed the following trends:

First is the information acquisition, processing, storage are more and more intelligent. Neural network, object oriented, machine learning, multimedia and computer vision technology research and application is becoming more and more popular. The hot spot of research include representation, storage, display of various types of multimedia information; geographical navigation and GIS function; prefabricated text, path tracking and interpretation of strategies.

Second is cross fusion of technology. Such as 3S (global positioning system, remote sensing, geographical information system) combined with the crop management information system, expert system and model system.

Third is the development of tools. For different user layer (programmer, knowledge engineers, agricultural science and technology workers and producers), intelligent agriculture information technology application system and auxiliary tools are developed, so as to improve the efficiency of system development.

From the above analysis, with the rapid development of modern urban agriculture construction, cultivation of innovative talents of science and technology becomes to one of the current urgent need talents.

2 the needs of modern urban agriculture talent is as oriented, to strengthen students' professional skills training

2.1 modern agriculture application is as the breakthrough point, to accurately grasp the teaching content

Practice teaching content of computer information professional courses are various, but how to properly used in agriculture, in the service of agriculture, is a problem worth thinking about by all the professional teachers. As in a database application curriculum, teachers can provide some agricultural information system implementation or agricultural expert system development problem, the student can take the system development as the main line, in accordance with the modular programming ideas, finally to complete the comprehensive practice teaching; in the hardware course practice teaching, teachers are subject to achieve some agricultural measure and control system, with the system simulation for the foundation, emphatically grasp control technology in agriculture, this teaching process is not only to cultivate the students' comprehensive ability to use professional knowledge to solve the problem in the field of agriculture, but also make students has more emotional understanding to scientific research and innovation practice. The greenhouse intelligent control system is developed by our college students, has been pilot run at the Mentougou agricultural ecological park and campus greenhouse, which is a truly typical example of based on the suburbs of Beijing, and service in the suburbs of Beijing.

2.2 taking "3+1" talents training mode, strengthen students’ practical ability

"3 +1" talent training mode reform refers to all students at the school majoring in computer science have to complete 3 years of courses study firstly, after mastering the thicker basic knowledge and solid professional knowledge, training at training bases for 1 years out of campus, in the real work environment, the theoretical knowledge and skills is further deepen, refined, skilled, so as to improve the occupation accomplishment, operation skills of students, and realize the target of pre job and pre-employment training, and promote the cultivation of innovative talents.

"3+1" in the "1" mode focused on practice teaching, graduation thesis is advanced to seventh semester to assign as tasks, two-way choice is made between teachers and students, students can choose the graduation design topic by themselves or in the topic given by the teacher, so as to meet the different levels of students' learning needs, the opening report system is implemented, at seventh semester, preparation of design and thesis can be started, which can not only ensure the sufficient time, also improve the learning interest and initiative of students for professional courses, improve the learning quality of design, thesis and the professional course.

2.3 according to the innovation and development of agricultural informatization, culture the students' professional ability

On the premise of assuring the teaching quality, professional elective courses should be open as much as possible, courses are designed for scientific and technological talents in line with modern urban agriculture innovative information, the three modules courses after adjustment shown as the following:

First, the network application development module. Mainly including the following courses: Webpage UI design basis, WEB client program design, WEB server program design, network database application development, agricultural expert system, intelligent decision support system. Through the study of the system, like business process, workflow, overall planning, site type of website design, students can clearly understand the important function of each part. Through the establishment of agriculture information handling technology practice platform and intelligent agriculture visualization platform, to complete research and development of the corresponding agricultural water-saving irrigation control system and intelligent greenhouse control system. Comprehensively improve the students' comprehensive ability, including data acquisition, data analysis and development of management program, so as to enable students to know new technology and new skills of related industry during the study in the school, enhance the practice ability of students to solve the related problem of agriculture. Second, the embedded application module. Mainly includes the embedded operating system, embedded program design basis, embedded advanced programming, and embedded technology application courses. Through the embedded software development projects to truly understand and grasp the ideology of embedded software development, and mainstream enterprise development technology, enhance the ability to solve the problem, accumulate experience of developing. Third, the network module and management module. Mainly includes network management, networking technology, network system management and maintenance, network security, LAN switching and wireless network courses. The courses can help students understand the necessary network and security knowledge of modern agricultural information sharing, master the application of network and management skills, have the network planning and organizing ability. The agricultural product quality traceability system is utilized to train students to master the barcode, RFID standards and rules, and relying on the computer network technology to raise the ability of students in the aspects like modern urban agriculture information management, program design and development, system thinking and analysis, related innovative experiment is carried out, to expand the learning ideas of students, and mobilize the enthusiasm of the students for learning, improve students' innovation ability in modern urban agriculture information network management.

2.4 To encourage participation in professional competition, and improve the students' scientific research innovation ability

In combination with the features in our universities, the advisors select the contents of the training of professional discipline competition. on the one hand, the actual project includes the training content; on the other hand, the training content returns to practical subject, and ultimately to achieve the objectives of cultivating the agricultural information talents to service the suburbs of Beijing. in the author’s college, embedded technology application and development of agricultural intelligent glasshouse, computer graphics and image processing and identification of various indicators of specific varieties, information laboratory network layout, the configuration of the server and other actual project will be made fusion in training, it is lively and interesting, the students can understand deeply the connotation of agricultural informatization, which further strengthens the practice teaching effect.

3 Establish a scientific management system, and strengthen the construction of scientific research team

3.1Selection and management system of scientific research innovation team

The general selection conditions for members of students' scientific research and innovation team are the team spirit, sense of responsibility and dedication, and must have strong hands-on

ability, sense of innovation, radio and computer basic knowledge, learning potential, self-learning ability, outstanding achievement. In addition, it may pay attention to develop the expertise of students in the teaching process, to absorb these professionals to participate in team activities, give full play to its strengths, and take the method of outstanding student counseling training other team members. In order to encourage more students to participate in the innovation of science and technology, papers, books, invention, technology development and other innovative achievement published by students or in the innovation teaching activities to learn new knowledge training is made the credit evaluation, so as to stimulate students' awareness of innovation, and create more innovation and a new good atmosphere.

3.2 to strengthen the professional guidance teachers' professional ability

Scientific innovation activities require guidance teachers with rich knowledge and practical experience. Teachers' knowledge needs to continuously be added, adjusted and updated. By participating in the training or learning, self-study and so on various ways widen the range of knowledge. When the student achievement is awarded, it should give guidance teachers the corresponding amount of scientific research and reward, and in the promotion and so on are also reflected, which makes the guidance teachers stay motivated to undertake practical teaching work.

4 Conclusion

It is an important responsibility of agricultural and forestry universities to cultivate innovation science and technology talents for modern urban agriculture. In order to meet the needs of the high quality and high level innovative scientific and technological talent by modern urban agriculture, we should constantly expand the idea and approach of cultivation of students' science and technology innovation ability train and science and technology innovation team construction, to solve the generated problems actively, and effectively improve the quality and effect of urban modern service.

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Beijing Modern agriculture technology system- poultry innovation Team

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