

Research on Agricultural Water Conservancy Engineering Applied Talents Cultivation System

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Abstract. In order to meet the national demand for basic line applied talents in application-oriented type premise, drawing on the experience of domestic and foreign Agricultural Water Conservancy Engineering undergraduate training, suitable for the southern region of agricultural water conservancy engineering applied undergraduate talents training model are discussed, puts forward the applied agricultural water conservancy engineering personnel training system.

Keywords. agricultural water conservancy engineering; undergraduate programs; training mode of applied talents

With the continuous development of society, modern agriculture to engineering and technical personnel has higher and more specialized requirements in terms of the personal qualities. At present, our country levels of higher education can be divided into two types is that academic and applied^[1-2]. How to train applied engineering talents to satisfy the needs of the social and economic development as our applied Engineering Colleges research hot topics. Nanchang Institute of Technology as a local engineering colleges, insist on engineering applied undergraduate education school-running orientation, close around local economic and social development and water conservancy industry needs to determine training engineering talents the target. Agricultural water conservancy engineering as a new major in our school, We combined with their own study of educational reform topics, discusses the engineering applied talents training target and strengthening engineering ability to train of diversification patterns and ways.

1 The Basic Requirement of Agricultural Water Conservancy Engineering Applied Talents Training

Not only have a certain breadth of knowledge, but also have a certain depth of knowledge. As agricultural water conservancy engineering talent of applied undergraduate colleges should not only have solid professional knowledge, has excellent applied knowledge, have certain science and the humanities and the related management knowledge, and on the basic theoretical knowledge to achieve considerable depth, situation and development trend of agricultural water conservancy industry will have

a certain understanding. Knowledge of the professional is both different from skilled talents in higher vocational college “enough” and “practical” for the degree requirements, and different from key university engineering “deep foundation” type talents, but to achieve the requirements of “solid foundation” and “enhance the staying power”. To be able to apply both skilled professional knowledge, but also on similar professions, such as: water conservancy and hydropower engineering, hydrology and water resources engineering expertise have a certain master, to achieve mastery through a comprehensive degree.

The present professional students not only have strong engineering and technology capabilities, but also have expanded the capacity of innovation. Require the students in can be competent for irrigation and water conservancy engineering surveying and planning, water-logged disaster of improving low production, small hydropower design and construction, rural water supply and drainage, irrigation and drainage pumping station design and construction, rural water environment ecology protection work, and can be engaged in project management, design and construction of hydraulic structures, the development and utilization of groundwater, etc. It can become a “one size fits all” type of role in terms of basic water services

Not only have a high professional quality, but also have some scientific literacy and humanities. In the process of engineering design, construction, operation and management, the use of professional knowledge and skills often and engineering technical personnel’s physical quality, responsibility, moral sense, will quality, and non-professional aspects of literacy has a close relationship. Therefore, in this respect of professional quality

training students to avoid “heavy professional skills, light integrated literacy”, too much emphasis on the value of human technology, tools, value, ignored human self-development, which makes low quality with high skill phenomenon, cause harm to the social and economic development, especially the development of water conservancy as the lifeblood of agriculture, If the low quality of water conservancy workers will bring great losses to the production of agriculture, so in this professional talent training should be emphasized in the process of all-round development and constantly improve the comprehensive quality.

2 Build professional applications of personnel training curriculum system for agricultural engineering

In terms of the professional curriculum, many institutions are stereotyped according to the traditional curriculum to set up our hospital - based Professional courses; especially for professional courses, whether in Engineering Colleges or Academy school, whether in the north or the southern colleges almost the same institutions, neither can reflect the characteristics of the institutions, but also not a good right medicine for the actual situation in the region. So, in this case, as a southern region institutions to foster and applied talents to the local community economic development services for the construction of the professional curriculum of some discussion^[3].

Agricultural engineering as a profession, setting for agricultural engineering services the foundation courses must be set in accordance with the same engineering specialties, including: higher mathematics, college English, University of chemistry, physics, political theory, sports etc., which need to increase the curriculum of university language to be able to improve students' ability of writing reports and the paper.

Professional basic course and specialized courses in addition to the traditional five mechanics, should include: 1) farmland water conservancy survey and planning related courses, 2) design and construction of the courses of hydraulic structures, 3) soil science and agricultural related courses, and 4) water conservancy project management related courses; 5) water quality monitoring and water conservation related courses^[4]. Where farmland water conservancy project planning, design and management is the key, especially to strengthen the teaching content project management. In particular, to strengthen the soil and farming, irrigation and drainage engineering experiments hours and project courses, select the south as the research object, set the moisture in the soil infiltration experiments; in addition, we need irrigation and drainage engineering course design combined with the actual project phase, especially projects that have been implemented, which can enhance students' understanding.

In order to broaden the breadth and depth of knowledge of the students in extracurricular professional settings, different from the nature of other professionals and institutions can set up some professional electives for students elective courses may include: 1) Groundwater Development and use aspects of the curriculum, design 2)

small hydro-power, construction, operation and management aspects of the curriculum, 3) water conservancy project management aspects of the curriculum, 4) rural water supply, drainage aspects of the curriculum, 5) saline, low-yielding fields water logging improved aspects of the curriculum, 6) Water Conservancy pastoral aspects of the curriculum, 7) other new theories, new technologies, new materials aspects of the curriculum.

3 Agricultural water conservancy engineering applied talents cultivating practice teaching system

In the process of building a curriculum system, involved the professional of the basic and specialized course increase practice teaching class hours, reduce the theory class hours, build hierarchical practice teaching module. Update the basic content of practice teaching, according to the “Foundation-Comprehensive-Innovative Practice” level arrange practical courses, at different levels, set up various types of practice course series. Whereby the Agricultural Water Conservancy Engineering practice teaching system is divided into four levels, namely basic skills, professional skills and comprehensive skills, innovative practice skills. On this basis, according to the professional curriculum system can be divided into five modules, namely the basic experiment module, hydraulic experimental module, hydraulic structure experiment module, irrigation and drainage engineering module, water conservancy project construction module. For each module, set the corresponding experimental practice, strengthening the abilities of students, enhance students' learning of this module knowledge.

In this professional talents cultivation, should focus on strengthening the professional with the local water affairs bureau, water conservancy bureau, design institute, construction, to establish a stable relationship with the relevant enterprises, establish off-campus practice base, ensure that students study in school can directly into a line, during engineering practice. In the process of curriculum setting, combined with five modules of 3, each module after the experiment set aside part of the theory of time, let the students go deep into the production line, the learned knowledge combining with actual, increase knowledge in practice, growth ability, so as to shorten the adaptation of the school to work in the future. In the graduation design and graduation thesis topic focus on university-enterprise cooperation, jointly choose design/paper topics, content, common guidance, and at the same time of training students' ability to solve practical problems, to consciously cultivate innovation ability.

Applied as a guide to strengthen the cultivation of agricultural engineering talent, focusing on training and production practice to build an organic combination of the system, to serve local economic development as the goal to develop students' practical ability, innovation and employment ability to focus, to further deepen the reform of higher engineering education personnel training and practice, to achieve research cooperation mechanism, to actively seek social and economic development application-oriented training model.

4 Conclusion

Under the new situation, the country's demand for agricultural water conservancy engineering talent with the new change, not only need to research talents, more in need of a large number of practical engineering and technical personnel. In this paper, drawing on experience in agricultural water conservancy engineering undergraduate training at home and abroad, based on the proposed application-oriented agricultural engineering personnel training system, the training model for the southern region of application-oriented agricultural water conservancy projects were discussed

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