"Three New Directions" and "Three Innovative Integration" Reform and Practice of Talent Training Mode of Internet of Things Engineering

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ABSTRACT

The establishment of full-course "three new directions" and "three innovative integration" talent training mode with a complete innovative chain can stimulate students' creativity, innovate practice plan and serve students' entrepreneurship. This article explores how to train new engineering talents with technological innovative ability, innovative awareness, rich entrepreneurial spirit and courage to devote them to practice through innovative teaching modes, interdisciplinary education and construction of entrepreneurial ecology, thus vigorously promoting teaching work and improving teaching quality.

KEYWORDS

Three new directions, Three innovative integration, New engineering, Entrepreneurship

INTRODUCTION

There are serious shortages of a new generation of information technology industry talents in China; there is an urgent need in the society for a large number of high-quality engineering professional and technical talents with solid professional foundation, broad subject knowledge, strong innovative awareness and practice abilities. China's engineering education has carried out a large number of reforms and practices over the years; the reform of training objectives has been shifted from training of engineering scientists to training of engineers, the reform of teaching contents has been transformed from subject system to engineering process system, the reform of training system has been changed from standardized training to personalized training, the reform of training process has been changed from traditional teaching to modern teaching, but the reform is far from being in place and it is still in in transition, as well as facing the challenge of the new industrial revolution. Foreign successful experiences worth our reference such as cultivating students' research abilities or creativity; encouraging students to understand multidisciplinary crossing through personal experience; and encouraging students to start a business by taking part in a viable business model.

The construction content of "new engineering", namely new ideas, new requirements and new ways (the abbreviation is "three new"). New engineering

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construction is carried out around "three new"; we should pay more attention to integrating the elements of innovation and entrepreneurship to create a full-course talent training model with complete innovation chain: "creativity-innovation-entrepreneurship" (the abbreviation is "three innovations"). The "three innovations' concentrate on stimulating students' creativity from the upstream, focus on innovative practice plan from the midstream, lay emphasis on serve students from the downstream. The scientific and technical revolution and industrial reform are rapid and the iterative, and train and build a large number of new types of engineering talents who meet the needs of regional economic development and industrial restructuring and upgrading, time and tide wait for no man. In order to take the initiative to adapt to new technology, new industry and new economy development, "three new directions" and "three innovative integration" talents training mode reform and innovation are developed in Internet of things engineering and other undergraduate engineering specialties, it's very necessary to train new engineering talents with technological innovative ability and innovative awareness, rich entrepreneurship spirit and courage to devote them to practice.

"NEW ENGINEERING" CONSTRUCTION CONTENT AND "THREE NEW"

In short, "three new" cover the construction content of "new engineering", which are new ideas, new requirements and new ways. The new ideas take responses to change, shaping of future as the construction ideas; new requirements take diversified and innovative new engineering talents as training requirements; the new way train new engineering talents via inheritance and innovation, crossing and integration, coordination and sharing. In other words, the construction content of "new engineering" is to improve students' adaptation to change and engineering innovation ability.

In the Internet of things engineering major, to innovate and establish "three new direction" and "three innovative integration" talent training mode, and train new engineering talents with technological innovative ability, innovative awareness, rich entrepreneurship spirit and courage to devote them to practice.

"THREE NEW DIRECTIONS AND THREE INNOVATIVE INTEGRATION" REFORM PROGRAM OF TALENT TRAINING MODE WITH COMPLETE INNOVATIVE CHAINS

Taking Internet of things engineering major for example, "three new directions" and "three innovative integration" talent training mode is formulated and implemented. The "three new" as the guidance, we should pay attention to the integration of innovative and entrepreneurship elements, and create a full-course talent training mode with complete innovation chain: "creativity-innovation-entrepreneurship."

New teaching and learning modes are created to guide students to learn independently, and take the initiative and creatively learn. Pay attention to students' personalized education, teach students in accordance with their aptitudes, make students find their own innovative potential in the process of independent learning, and bravely try to creatively solve the problem. The students as the foundation, we should reform teaching methods around the improvement of students' professional
ability and overall quality. The first is to reform teaching organization form of the theory classroom, change from the traditional one-way teaching to discussion, case teaching, and improves students' interest in learning. The second is to increase the innovative experiment, project teaching, field training and practice, combination of work and study and other comprehensive practice links in practice teaching link, improve students' comprehensive application ability of knowledge. The combination of class and extracurricular learning, teaching and learning work together to complete teaching tasks, enable students to learn independently and improve learning initiative. The third is to adopt open teaching and research teaching and other ways to guide students to master new knowledge and stimulate students' interest in further research on major and industry development, and provide the basis for the students' subsequent development. The scientific research activities are introduced into the teaching, strengthen engineering training and practice links, and make students' knowledge sources multiple channels and diversified. Organize students to participate in extracurricular science and technology activities, activate students' infinite imagination inspiration, creative awareness and innovative ability, have personalized views, teachers encourage more, and give clever and flexible and creative guidance, enrich their thinking and train students who are rich in creation. Through construction of innovative teaching modes, interdisciplinary education and entrepreneurial ecology, we should train new engineering talents who have the technological innovative ability and innovative consciousness, and are full of entrepreneurship and have the courage to devote them to practice.

The "new engineering" construction needs to clarify the industrial demand, introduce marketization forces, emphasize the power of enterprises, and look for motivated enterprises to participate in new engineering construction. Therefore, the Internet of things engineering major start the new engineering construction, explore "three new directions and three innovative integration" talent training mode, it is necessary to broaden the practice channels of college students, and society, build practice and practice teaching base with society, industry, enterprises and institutions, making full use of respective advantages of talent training in schools and enterprises, the school education which is based on knowledge and production, scientific research practice organically integrate, solve the problem of disconnection between school education and social needs, narrow the gap between schools and society in talent training and demand, and enhance students' practical knowledge, practical ability and employability. Making full use of enterprise talents' practice ability and management advantages, equipment and technological advantages, and build school-enterprise cooperative practice base, training center. High-quality out-of-school practice base is an important guarantee for the normal implementation of practice teaching links, and it is an important platform for training practice talents, scientific research quality, innovative awareness and innovative ability of engineering talents.

The subject competition as the carrier, carry out extracurricular science and technology competitions and create a more diversified space for innovation and entrepreneurship education. Actively organize students to participate in all levels of innovation and entrepreneurship competitions, organize students to apply for college students' innovation and entrepreneurship topics at all levels, encourage students to practice, and actively carry out the school "entrepreneurship practice" activities to train students' entrepreneurial practice ability; through the students' "community organizations "work-study center", "college students entrepreneurship center, "maker
"space" and other organizations, specifically carry out "psychological training", "entrepreneurship exploration" and "entrepreneurship simulation" and other activities, cultivate students' psychological quality of entrepreneurs; simulate entrepreneurship practice, show students entrepreneurship achievements intensively, scientifically evaluate students' entrepreneurship abilities, actively help students to attract venture capital, launch more mature entrepreneur teams and entrepreneur projects duly, and help students to successfully complete entrepreneurship from school to society.

TALENT TRAINING PROGRAMS OF INTERNET OF THINGS ENGINEERING MAJOR WHICH REFLECT THE "THREE NEW DIRECTION, THREE INNOVATIVE INTEGRATION" CHARACTERISTICS

According to the status of regional economic development and industrial restructuring and upgrading, this paper analyzes the talent demand characteristics under the rapid development of new technology, industry and economy. The Internet of things, big data and a new generation of information technology industries as the main, in-depth research and analysis, grasp the status of industry, trade, enterprise and change characteristics of talent demands and the ability and quality requirements of graduates with related specialties of Internet of things under the times background of swift iterative scientific and technological revolution and the industrial change.

Taking Internet of things engineering major for example, reform talent training the mode, redesign the program training of professional, build the curriculum system, and establish a professionals' training program that reflects the characteristics of "three new directions" and "three innovative integration".

CONCLUSION

This article explores the establishment of full-course "three new directions" and "three innovative integration" talent training mode with the complete innovative chain, stimulate students' creativity, innovate practice plan, serve students' entrepreneurship; carry out talent training model reform, talent training initiative adapt to requirements of new technology, industry and economy; strengthen the connotation construction of colleges and universities and improve the quality of talent training; discuss the reform trends and frontier developments of higher education teaching reform; actively devote them to the construction of "new engineering", further change their ideas and actively adapt to new situations and tasks of the higher education teaching reform, enhance the capabilities to serve area economic development and industrial reconstructing and upgrading, and strengthen the function of university serving society.

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