Research and Exploration on Cultivating Practical Ability of Students Majoring in Internet of Things Engineering Under the Background of New Engineering

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Abstract: Under the background of "new engineering", the major of Internet of Things engineering is an emerging engineering major with intelligent science and technology as the core, integrating electronics, information, computer and other disciplines, and its training goal is to cultivate composite applied talents with professional knowledge of Internet of Things engineering, innovative consciousness and entrepreneurial spirit. Under the background of new engineering, it is an important task for colleges and universities to train high-quality talents with innovative consciousness, innovative ability and practical ability. In the training of talents for Internet of Things engineering, emphasis should be placed on cultivating students' practical ability to adapt to the changes in the current social demand for talents. Based on this, this paper puts forward the strategy of cultivating practical ability of students majoring in Internet of Things engineering under the background of new engineering.

Keywords: New engineering background; Internet of Things engineering; Students practical ability training; Research and exploration

Introduction:

The Internet of Things (iot) is an emerging technology subject that is developing rapidly. Colleges and universities are important positions for the cultivation of talents in the Internet of Things industry. In the process of the establishment and development of colleges and universities, the Internet of Things engineering major has gradually formed a relatively complete set of practical ability training programs for students after continuous exploration and research. This paper mainly analyzes and discusses the cultivation methods of practical ability of students majoring in Internet of Things engineering under the background of new engineering.

1. Current situation of practical ability training for students majoring in Internet of Things engineering

The first is the lack of standards in practical teaching. The content and methods of practical teaching for Internet of Things engineering in China are mainly based on the syllabus and personnel training program of "Internet of Things" professional courses. However, the practical teaching content and methods of the Internet of Things engineering major have not formed standards, and the curriculum system is not perfect. Curriculum system construction is based on the "Internet of Things" course syllabus, on which a relatively complete practical teaching system can be built. However, the "Internet of Things" course syllabus often fails to meet the practical needs of students majoring in Internet of Things engineering [1].Then there is the lack of teachers. Compared with traditional engineering majors, the major of Internet of Things engineering has strong applicability and practicality, and its theory and practice are closely combined. However, there is a lack of compound teachers who can understand both theory and guide practice in Chinese universitiesThe staff. The lack of "double-qualified" teachers restricts the development of practical teaching and the cultivation of students' ability. The third is lack of innovation. Due to the lack of understanding of talent training mode and the lack of attention in cultivating students' innovative ability, the innovative ability of Chinese college students is not strong.

2. Research on the cultivation of practical ability of students majoring in Internet of Things engineering under the background of new engineering

2.1 Construction of experimental training platform

At present, colleges and universities in the construction of Internet of Things engineering, often first establish a laboratory, and then purchase equipment, instruments, etc., due to the lack of research and analysis of the real needs of enterprises, the laboratory in the design planning, experimental content and methods are lack of pertinence and practicality. Therefore, in order to solve the problems in the training of practical ability of students majoring in Internet of Things engineering, it is necessary to start with the construction of laboratory and experimental training platform for Internet of Things engineering. The first step is to investigate the needs of enterprises for Internet of Things engineering. The first step is to investigate the needs of enterprises for Internet of Things engineering professionals. Through research, we can understand the actual needs of enterprises for Internet of Things engineering professionals, including knowledge and skills, practical ability, professional quality and other aspects. The second is the construction of experimental training platform.It is necessary to build an experimental and practical training platform related to the actual work of the enterprise according to the needs of the enterprise, so that students can understand the needs of the enterprise for talents during the study in the laboratory, so as to carry out targeted practical ability training[2]. Finally, innovation and entrepreneurship education. In the process of the construction of the experimental training platform, innovation and entrepreneurship education should be integrated into the experimental training platform, and some practical projects and practical activities close to students' life and social needs should be developed by relying on the laboratory. At the same time, it is necessary to evaluate the achievements of students' innovation and entrepreneurship, and timely adjust the construction content of the experimental and practical training platform and the equipment and instruments required in the experimental and practical training platform according to the evaluation results.

2.2 Building a project-oriented practical teaching system

Under the background of new engineering, the curriculum of Internet of Things engineering major should focus on cultivating students' practical ability, mainly including practical teaching links such as experiment, practical training and course design. It should be oriented to engineering projects, set up curriculum system scientifically and reasonably, improve teaching content and improve teaching quality. For the Internet of Things engineering profession, the connotation of "new engineering" is not only to train engineering and technical personnel, but more importantly, to train talents with innovative spirit and practical ability.Therefore, in the construction of practical teaching system of Internet of Things engineering under the background of new engineering, it should be guided by Internet of Things engineering projects, and realized through scientific and reasonable curriculum system construction and reasonable arrangement of experimental and practical training teaching links. The practical teaching content of the Internet of Things engineering major should be based on the construction of the curriculum system and oriented to the project. The construction of curriculum system includes two parts: theory and practice. The theoretical part mainly includes the basic theoretical knowledge related to the Internet of Things, the Internet of Things information security and other aspects; The practical part mainly includes iot application development, iot device system design and implementation, iot application development project training and so on.

The construction of curriculum system mainly includes the establishment of specialized basic courses and specialized core courses for new engineering construction. The basic course is mainly to train students to understand and master the basic concepts, basic principles and methods of Internet of Things engineering; The core curriculum of the major is to cultivate students' in-depth understanding and mastery of the theoretical system and technical architecture of the Internet of Things technology, and to achieve the cultivation requirements of students' practical ability under the background of new engineering.

2.3 Strengthening school-enterprise cooperation

As the country attaches great importance to the construction of new engineering, the combination of college education and social development is increasingly close, and the participation and support of enterprises are of great significance to the training of engineering applied talents. At present, most enterprises lack enthusiasm in cooperating with colleges and universities, mainly because they hope colleges and universities can provide them with technical support, human resources and other supports. Colleges and universities should strengthen cooperation with enterprises.The cultivation of practical ability of students majoring in Internet of Things engineering should start from the following aspects: First, attach importance to laboratory construction. Schools should attach importance to laboratory construction and build a good practice platform and experimental environment. On this basis, multiple project laboratories, embedded system laboratories and other laboratories can be set up. Second, strengthen school-enterprise cooperation. The school can establish long-term cooperative relations with enterprises and regularly invite enterprise engineers to the school for

guidance.Enterprise engineers can use their own technical advantages to provide practical guidance and guidance for students; It can also provide internship opportunities and jobs for students to realize the combination of theory and practice. Third, enhance the opportunities for students to participate in research projects. Schools can encourage teachers and students to participate in enterprise scientific and technological innovation projects to improve students' scientific research and innovation ability. In addition, students can also be encouraged to participate in the scientific research projects of enterprises to provide practical opportunities and exercise platforms for students.

2.4 Strengthening the ranks of teachers

Schools should attach importance to the introduction and training of teachers majoring in Internet of Things engineering, and formulate detailed introduction and training plans. On the one hand, schools can employ business experts as part-time teachers to participate in the teaching work of schools by taking temporary positions in enterprises and signing long-term cooperation agreements with enterprises. On the other hand, schools can pay equal attention to introduction and training, and hire some high-level entrepreneurs, engineers and technicians as part-time teachers to enrich the teaching force.In addition, schools can cooperate with enterprises to train teachers. Schools should attach importance to the construction of teaching staff and strengthen the training of young teachers. Schools can develop a "mentor" system for young teachers to give personalized guidance to young teachers. Colleges and universities can establish a high level, stable, reasonable structure of teachers. In addition, schools can also adopt "Go out" and "Please come in"The way to carry out faculty building. "Going out" refers to the introduction of outstanding talents as a supplement to the introduction of high-level talents in universities; "Invite in" means to hire experts and scholars from well-known enterprises and research institutions at home and abroad to give lectures or participate in teaching and research activities. Introduce high-level talents into the school teaching staff. The "double-qualified and dual-capable" teaching staff refers to the engineering and technical personnel who have not only high professional theoretical level and rich practical experience, but also strong engineering practical ability and rich project experience. In order to adapt to the needs of social development and the trend of industry development, schools should attach importance to the training and introduction of young teachers.

3. Concluding remarks

To sum up, under the background of new engineering, the cultivation of practical ability of students majoring in Internet of Things engineering needs to be combined with social needs and industry development, and constantly adjusted according to the needs of the market. On the one hand, it is necessary to strengthen the connection between schools and enterprises, improve the practical teaching system, strengthen the construction of practical teaching platform, and improve the quality of practical teaching. On the construction of practical teaching platform, and improve the quality of practical teaching. On the other hand, it is also necessary to actively use the mode of school-enterprise cooperation and cultivate students' practical ability and innovation consciousness by setting up practice bases in enterprises. So as to provide students with better practical teaching conditions.

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