

Discussion on the Training System of Internet of Things Creators under the Background of New Engineering

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Abstract: With the rapid rise of the global technological revolution, the new economy characterized by new technology, new business type, new industry and new mode is developing vigorously. It is urgent to develop the construction of "new engineering science" to support the talent needs of the new economic development. Under the new situation, a higher standard has been put forward for the cultivation of engineering talents-to train a large number of high-quality compound "new engineering subjects" talents with strong engineering practice ability, strong innovation ability and international competitiveness. Therefore, the reform of professional practice teaching system is imperative. The implementation of the Internet of things under the background of new engineering requires a systematic system structure to grasp and guide the education of the Internet of things from a macro point of view. This study integrates the basic operating modes and ideas of the creative action, combining the particularity and complexity of the field of education according to the previous research and experience of the experts according to the previous experts' research and experience. This paper attempts to construct the system structure of creative education, and ponders and looks forward to the wide-scale implementation of creative education, the top-level design.

1. Introduction

In February 2017, the Ministry of Education issued the Circular of the Department of higher Education of the Ministry of Education on the Development of New Engineering Research and practice, and officially launched the New Engineering study^[1]. June 2017. The Ministry of Education has issued the Guide to New Engineering Research and practice projects. There are 24 new topics in five parts: new concept, new structure, new model, new quality, and new system. The concept of "New Engineering" has become the focus of research in a short period, and it points out a new direction for the cultivation of talents in colleges and universities. Compared with the traditional talent training, the talents of the new engineering discipline must be more and more. In the traditional sense, the cultivation of talents must transformed and upgraded, the construction of new specialties or the transformation of traditional majors, and the cultivation of talents who serve the development of emerging industries and future technological innovation^[4]. Higher vocational education, as an important part of the training of high-skilled talents, must strengthen the research on the concept of new engineering subjects, change the concept, arrange ahead of time, and reform the training mode of innovative talents under the background of the cultivation of new engineering talents^[5]. While training engineering science and technology talents in undergraduate colleges and universities, higher vocational colleges should also keep pace with the development of the industry. In order to cultivate high quality and skilled talents, which can meet the needs of the society, we should set up new specialties, innovate the training scheme and mode of training. Taking Anhui National Defense Science and Technology Vocational College as an example, combined with the understanding of the concept of new engineering subjects, this paper expounds the training scheme and training mode practice of mobile application and development talents, and puts forward the guarantee and evaluation scheme of talent training quality.

2. Definition

The term "Maker" derived from the English translation of "creators", especially those who are keen to use new technologies to transform extraordinary ideas into real-world products. Theoretically, everyone is the creator, the factory creation in daily life; artistic creation and so on all belong to the scope of the creator action. According to Dougherty, the creator editor-in-chief, the creator is a group of people with specific attributes, and insists on sharing and disseminating knowledge. One who strives to turn ideas into reality? In a narrow sense, the founder's father, Chris Anderson, defined the term "creator" as, "not for profit, using 3D printing technology and all kinds of open source hardware." They focus more on engineering projects such as electronic products, mechanical products, robotics, and 3D printing, "he said," and they are trying to transform their ideas into real-world people, "he said," and they focus their research interests on engineering projects such as electronics, mechanical products, robotics, and 3D printing. Creators used to refer to an idea and culture dedicated to innovation and creation. Creators are creative activities, and the core idea is the sharing of technology, tools and places. The emergence of the initiative is due to the popularization of open source software and hardware, the reduction of the cost of electronic components and the rapid development of the information industry in recent years, which provides the possibility for entrepreneurs to innovate and create.

Recently, the founder movement, whose "creator" centered on personal design, personal manufacture and innovation, is also a group of people who stick to innovation, continue to practice, share and pursue a better life. As the birthplace of the creative culture, the United States shows its strong industrial design and innovation ability, which is closely related to the cultivation of the creators in the educational concept. American universities have a variety of creative studios, providing students with a variety of design and production platforms, as well as a comprehensive creative education curriculum system. In addition, domestic creators' studios rely more on social resources. We have not made full use of the resources of colleges and universities to build them. Especially applied technology universities, this aspect of construction depth is not enough, and lack of systematic, high-quality creative practice courses. True creators should have the following abilities: the use of basic tools, the comprehensive use of materials, the use of basic physical and chemical knowledge, the use of geometry and drawing knowledge, and ultimately a strong ability to innovate. At present, engineering college, students should become the main body and active promoter of the founder movement. Creators and the cultivation of creative space is precisely focused on the development of these capabilities. Therefore, the concept of creators is in line with the requirements of "new engineering" in terms of human ability, and it is also double. The direction of educational reform and the deep integration of professional education and innovative entrepreneurship education provide a way for the transformation and development of applied undergraduate courses. According to the "Beijing Guide" of New Engineering, based on the new learning model of Bloom and using the concept of entrepreneur for reference, this paper explores the talent training mode of the coupling of applied technology and innovative entrepreneurship, and puts forward the practice curriculum system of "four Innovations". Pay attention to the full combination of students' theoretical study and practical training, imitating learning and innovative training, set up a diversified practice and innovation platform, realize the effective integration of professional education, innovative entrepreneurship education and personalized training.

3. The necessity and importance of constructing the Creative Education system of Internet of things under the background of New Engineering

At present, the research on creative education is still in the exploration stage, the related theories are not mature, and its implementation in the school has some controversy. The scholars' research on the creative education mainly focuses on the analysis of the concept of the creative education, and the research on the creative education focused on the analysis of the creative education concept. The theoretical research on value potential and controversy, the construction of creative space in schools and the practical research on creative education and discipline integration, but the

systematic framework that guides the implementation of creative education as a whole is rarely involved. The development of creative education in the school lacks systematic theoretical and structural guidance, the orientation of teaching objectives is not clear, schools are mostly scattered to set up courses related to creative education, so the construction of creative education system has important principles. On the practical significance, we can grasp and guide the implementation of creative education in schools macroscopically, and make the school realize the potential and value of creative education at the level of consciousness, especially by the first-line teachers. At the planning level, the author holds and designs the implementation of the creative education in the school as a whole, guides the construction of the creative space and the development and practice of the creative course at the practical level. Based on this, this research synthesizes the operation mode and train of thought of the initiative in the traditional industry, combines the particularity and complexity in the field of education, according to the previous research and the experience foundation, and attempts to construct the system structure of the entrepreneur education. With a view to the development and promotion of the founding education, the line provides some reference.

4. The Architecture of Internet of things founder Education under the New Engineering background

In this study, combining with the particularity of educational field, the author tries to construct the system structure of creative education by integrating the train of thought and link of the creative action in the traditional industry and combining with the particularity of the educational field. The following is a detailed analysis of the various parts of the creative education architecture.

4.1 Technical support.

The implementation and promotion of creative education needs the effective support of computer technology and information technology, such as 3D technology, wearable technology, virtual reality technology and sensing technology, for example, the construction of creative space will use 3D technology, wearable technology, virtual reality technology and sensing technology, etc. Network communication technology, as the link of creative communication, runs through the implementation of creative education throughout the whole process. Technical support is the premise and basis for the implementation and promotion of creative education.

4.2 Creating space.

The creative space is the place where the creative activities carried out. The basic form of the guest space is usually a physical site equipped with various hardware tools, related equipment and support for manufacturing. A typical guest space is usually equipped with 3D printers, milling machines, CNC machine tools, laser cutting machines and open source hardware and software platforms, etc., while constantly updating and perfecting as needed in order to maintain the sustainable development of guest space ^[9]. Creative space is more than just Is a single creative activity, it also creates a cooperative and shared environment for the creators, and the cooperative communication experience and social identity gained by the creators here. It is an important factor to maintain the adhesion between the groups and to ensure the continuous promotion of the project ^[10]. The most representative in China is T sing hua Creative Space, which is an open source community of software and hardware ^[11].

4.3 Creator network.

Founder network is the online creator exchange platform, including the founder community, open source community, forums and crowd funding networks. Creators around the world connect through networks, exchange and discuss projects, share knowledge, experiences and tools, exchange or not, transcend the barriers of space and region, and make up for the limitations of space and space of physical creators. At the same time, the Traveler Network provides a platform for project showcases, staff expansion, fund raising and creative gatherings, where creators can launch

projects to display creative ideas and project plans in the Traveler community. Interested people can add people to the project.

4.4 Guest creation course.

The founder course consists of three main modules. First, intelligent tools use class to meet the students from the concept-design-scan-print output from the integrated machining process. According to the actual needs of the learners, Sketch Up 3D design courses, Kinect 3D somatosensory camera courses and 3D printer courses offered. At the same time, these courses combined with software and hardware programming in order to improve learners' hands-on ability. Secondly, the software and hardware programming courses, offering courses similar to Arduino, the main feature of Arduino is open source, each learner in the open source protocol model. They can modify the original design and the corresponding code according to their own ideas, and then share their creative ideas with other learners for reference and use. Finally, it is to improve the students' digital literacy curriculum, improve the students' digital literacy can not only preach, but also practice while exploring. the combination of theory and practice can enhance the digital ability to the maximum extent.

The choice of these courses is that learners make open choices according to their interests and interests as well as their needs in the process of making, to ensure that what learners learn in the process of learning is knowledge that is conducive to their own production. By dividing the course system into compulsory courses and elective courses, theoretical courses and practical courses, it is helpful for students to construct a solid theoretical basis of their own disciplines, and at the same time combine with practical knowledge to construct a kind of "do, learn, do, and learn". Create an integrated curriculum system.

5. Summary

After several years of development, the technology system of the Internet of things industry is becoming more and more mature. Under the background of "New Engineering", in order to cultivate high-quality skilled talents more in line with the needs of the industry, we have perfected the training scheme for creative professionals under the new engineering background. In the aspect of quality assurance and evaluation of talent training, a solution combining process monitoring and third party evaluation put forward, and a more effective conclusion is drawn. With the renewal and development of technology, new industries are constantly rising, the creation of the need for the cultivation of customers. In order to revise to meet the needs of the society, the renewal of the quality assurance and evaluation mechanism of the creators should become a regular work. The reform of practice teaching system of engineering specialty must change from simple imitating practice to comprehensive practice. Practice teaching should pay more attention to the comprehensive use of knowledge and innovate in the process of practice. Gradually carry on the teaching content design and the teaching organization optimization from the lower grade curriculum to the senior grade curriculum, give full play to the teaching content design and teaching organization optimization. The function of the practice platform inside and outside the school, make full use of the modern education means. Promote the connotation and the quality of the practice teaching link in an all-round way.

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