

CULTIVATION OF INNOVATIVE ABILITY OF TALENTS IN JOB TRAINING COURSES FROM THE PERSPECTIVE OF EDUCATION ECOSYSTEM

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Abstract

Focusing on the cultivation of talents' innovation ability by the professional course system of unmanned aerospace vehicle (UAV) technology, we will explore the talent cultivation mode from the perspective of education ecosystem, analyze the low enthusiasm for independent learning in talent cultivation, how to reflect the job demand, closed-loop talent evaluation and lifelong learning how to implement and other issues. Innovative education models, curriculum system design, training quality assurance and other methods and mechanisms driven by job competency requirements are studied, which actively coordinate to "producers", "decomposers" and "consumers" in the innovative education ecosystem and "inorganic environment" and other major factors, aiming to explore the innovation ability training of high-quality innovative talents. Combining scientific literacy, innovative talents with "knowledge-ability-quality" are cultivated. Combined with the innovative education model of the education ecosystem, the innovation ability of talents will be improved. Combined with talent evaluation feedback and training exchange mechanism, the improvement of iterative education ecological cycle can be realized.

Keywords: *Job training, education ecosystem, innovative ability, innovative talents cultivation.*

1. Innovation and entrepreneurship education ecosystem

1.1. Introduction

The construction of innovation and entrepreneurship education ecosystem in colleges and universities is a frontier hotspot of innovation and entrepreneurship education research at home and abroad. Since the middle of the 20th century, innovation and entrepreneurship education research and practice have increasingly become a topic of the times that countries around the world pay close attention to. Innovation and entrepreneurship, as a social phenomenon, have existed for some time (Harvard, 2005). Following the opening of the first entrepreneurship course at College of Business of Harvard in 1947, innovation and entrepreneurship education in foreign universities has gradually developed vigorously. At present, developed countries such as the United States and the United Kingdom have formulated national frameworks for innovation and entrepreneurship education, and international organizations such as the United Nations and the European Union are also making every effort to promote them.

In the early 20th century, Xingzhi Tao's "creation" education in the theory and practice of life education should be the source of modern innovation and entrepreneurship education in China. At the beginning of the reform and opening up, Comrade Deng Xiaoping vigorously advocated and effectively promoted the education of "hard work and entrepreneurship", and developed it into a kind of entrepreneurship education for the whole nation.

China is currently in a new era of "double first-class" higher education development. In order to break the traditional single-track competition model of "research universities can become world-class universities", the education community is actively exploring the inclusion of innovation and entrepreneurship education into the "double first-class" evaluation index system. The construction of the educational ecosystem has gradually been recognized by the higher education innovation system, especially in local colleges and universities, and the school-running concept of "applying what you have learned", represented by Stanford University, has gradually become the consensus of higher education. Innovative education is an extremely complex systematic project. It is not the mechanical combination and superposition of various elements, but the interactive generation and organic integration of various elements based on the overall goal and relying on internal logic. Domestically, universities have conducted in-depth exploration and practice in innovation incubation bases, integration of production, education and research, and university innovation and entrepreneurship science parks.

China's specific national conditions and characteristic paths determine that the Western model cannot be copied, and must be based on China's national conditions, make Chinese choices, and reflect Chinese characteristics on the basis of comprehensively drawing on the experience of ancient and modern China and foreign countries. Focus on creating a "China model", especially in terms of stimulating innovation and development, promoting the improvement of systems and mechanisms, and building an internal and external support system.

1.2. Evolution

Throughout the development process of innovation and entrepreneurship education research and practice in various countries in the world, it has mainly gone through three stages. The first is the stage of small entrepreneurship education. At this stage, the main body of practice is business schools and other individual departments, and the target is also limited to a small number of students. The goal is to promote more entrepreneurial enterprises. The theoretical research field mainly focuses on how to teach students to start new enterprises. The second is the stage of innovation and entrepreneurship education (Ebrahimminejad, 2017). At this stage, entrepreneurship education has developed into a school-wide, broad-spectrum innovation and entrepreneurship education for all students, multi-departmental collaboration, and mutual promotion of innovation and entrepreneurship. How to improve students' innovation and entrepreneurship literacy. The third is the stage of ecological innovation and entrepreneurship education. In the 1930s, MIT played a key role in the reconstruction and revival of the New England area at that time, which aroused people's thinking about the relationship between the tripartite cooperation between universities, industry and government and innovation and development.

In recent years, domestic scholars' research on the construction of innovation and entrepreneurship education ecosystem in colleges and universities has mainly focused on three aspects: first, the research on the construction experience of typical foreign universities; second, the analysis of outstanding problems in the construction of innovation and entrepreneurship education ecosystem in Chinese universities; third It is to put forward some construction paths that reflect universal experience and Chinese characteristics.

2. Cultivation of relevant talents in the innovation and entrepreneurship education ecosystem

2.1. Engineering practice ability

Engineering practice ability is also known as competence, professional ability, problem-solving ability, etc. in the field of engineering specialty. It is different from a single flat hands-on ability, but a multi-dimensional ability system that integrates knowledge, skills, emotions, attitudes, and values. The definition of the concept of engineering practice ability in the current education circle is mainly divided into two types: 1. Deconstruct engineering practice ability as a sack of undergraduates applying professional knowledge and technology to solve engineering problems under the background of professional disciplines, focusing on problem solving at the technical level; 2. Deconstruct engineering practice ability into a real practice situation, The set of competencies required by undergraduates to engage in professional practice as a prospective engineer not only focuses on solving problems at the technical level, but also interacts with stakeholders at the non-technical level (Pons, 2016).

2.2. Artificial intelligence in education

Since the concept of artificial intelligence was proposed, it has been more than 60 years of development and has accumulated huge potential. Artificial intelligence in education is the deep integration and development of artificial intelligence and education. The research on "artificial intelligence + education" is in full swing, producing many research results. At present, the main application form is artificial intelligence education. By applying artificial intelligence to the field of education, the quality of education can be improved. "Artificial intelligence + education" can realize large-scale customized educational content and precise services, help teachers to correct homework, communicate with students, and promote personalized learning, etc. Some research results define the connotation of educational artificial intelligence (Yan, 2017), and put forward the development path of artificial intelligence education application in China in the era of smart education (Ma, 2017). Education should be one of the main application fields of artificial intelligence.

2.3. Scientific literacy

Scientific literacy is an essential literacy for individuals to achieve life-long development. The United Nations Educational, Scientific and Cultural Organization (UNESCO) clearly points out that the core literacy index system must cover the field of "science and technology", requiring students not only to

master a specific scientific knowledge system, but also to develop or apply scientific knowledge. technology. Its three key components: rational thinking, critical questioning and scientific inquiry, which complement each other and complement each other, and are also the basic components of the world view. This is also an important part of the ideological and political education that the Chinese education community is now promoting.

3. Innovation and entrepreneurship education ecosystem construction

3.1. System composition and elements

This paper focuses on the cultivation of talents' innovation ability by the UAV technology professional talent training system, explores the talent training mode from the perspective of the ecological education system, and analyzes the low enthusiasm for independent learning in talent training, how to reflect the job demand, and closed-loop talent evaluation. and how lifelong learning is implemented. Driven by job competency requirements, research methods and mechanisms for innovative education models, curriculum system design, and training quality assurance, and actively coordinate the "producers", "decomposers", "consumers" and "inorganic environments" in the innovative education ecosystem. Various main factors, explore the innovation ability training of high-quality innovative talents.

Combined with the characteristics of intelligent unmanned systems, explore the training mode of "UAV technology" demand field of job training. The main research contents include:

(1) "Producer's Perspective", study the optimization design of the curriculum system and the construction methods of teachers; the optimization design of the first-class curriculum system mainly includes the overall design and optimization of the curriculum system, the reform of teaching content, and the construction of teaching materials.

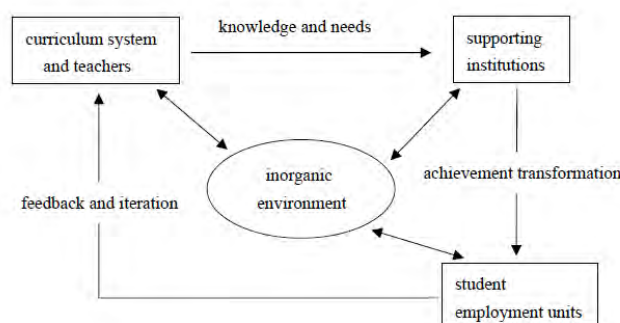
(2) "Consumer perspective", combined with training demand research, through questionnaires, interviews with various units of the army, literature research and other methods to study the current status and needs of UAV technical talents; post ability model analysis and design, aiming at the basics and positions of students. Analyze and design job competency models based on needs, school advantages and teacher conditions.

(3) "Decomposers, Inorganic Environment Perspective", based on innovative Internet networks, colleges and departments and other institutions, optimize the "inorganic environment", combine demand-driven, study the design of training effectiveness evaluation methods, implement a talent training feedback evaluation mechanism, and promote the improvement of talent training quality.

3.2. System construction goals and strategies

As shown in Figure 1, the innovation and entrepreneurship education ecosystem of job training. The producers are the curriculum system and teachers; the decomposers are the supporting institutions, such as entrepreneurship research centers, colleges and departments, etc.; the consumers are the student employment units; the inorganic environment is the school spirit and culture, robot culture, super-fine culture, etc.

Figure 1. Job-training Education Ecosystem.



The core task implicit in the entire education ecosystem is actually talent cultivation. Around this core task, "producers", "consumers" and "decomposers" work together in an "inorganic environment" to follow the "survival of the fittest" principle to achieve a healthy, orderly, virtuous cycle of innovative education ecosystem operations and the cultivation of innovative talents. The specific construction measures are as follows:

(1) Combined with the research on training needs, the current status and needs of UAV technical talents are studied through questionnaires, interviews with employers, and literature research. Establish a communication mechanism between the supply side and the demand side.

(2) Carry out job competency model analysis and design. According to the basic and job requirements of the students, the advantages of the school and the conditions of the teachers, the job ability model is analyzed and designed, and the differentiated training possibilities of different individuals and the space for talent improvement are examined based on the training plan.

(3) Actively promote the reform of teaching concepts and provide a suitable "inorganic environment" atmosphere for the innovation and cultivation of talents; the promoting role and key factors of "decomposers" such as research institutes, departments, and innovation research centers in the "demand-supply" loop.

(4) Encourage the use of information-based teaching methods and models to carry out "producer" behavior, which not only improves students' enthusiasm for learning, but also provides alternatives for teaching implementation for major events such as the new crown epidemic.

(5) Combined with the optimized construction of "inorganic environment", the reform of practical education and teaching will be carried out in depth, and virtual simulation experiments and joint training practice will be actively explored.

(6) Combining scientific literacy and the sustainable development principle of "inorganic environment", it drives students to learn independently, fulfills the principle of "survival of the fittest", and establishes a lifelong learning mechanism for each major based on the MOOC university hall and lifelong virtual tutors.

At the same time, a reasonable evaluation mechanism is constructed, as follows:

(1) Based on the flow of knowledge and demand information, improve the integration of "producers" (curriculum system, teaching staff) in general education + job education and smooth transition with job position capacity building. At the same time, it provides policy support for innovation and entrepreneurship, platform resources, research and training to complete the continuous transformation of the teaching staff.

(2) Based on the transformation of achievements, establish a road construction mechanism for the "demand-supply" loop of industry-university-research integration between "decomposers" (education support institutions, such as colleges and departments) and "consumer" employers.

(3) Based on feedback iterations, fully consider the employer's assessment of the professional position ability of the employed students, through different special training plans, and give feedback to the "producer" (course system, teaching staff) and "decomposer" (education support institutions, departments, etc.) update needs and training deviations.

4. Epilogue

We will build a set of innovative ecological education system-based UAV technology talent innovation ability training system scheme suitable for China's first-class colleges and universities, and propose implementation strategies to improve and innovate talent employment education practices. The final research results are in the form of Project research report. After the research results are obtained, we will first apply it to the training practice of UAV technology in our school. After the modification and improvement, we will formally submit a consultation report to the Provincial Department of Education, and strive to promote it in the whole province, and at the same time to the national education department. The Ministry of Education and the Provincial Department of Education submitted proposals for wider promotion.

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