Exploration and Practice of Training Innovative Talents with Intelligent Equipment

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Abstract. Aiming at the ability demand of innovative talents in the intelligent war, the problems existing in the training mode in curriculum teaching were sorted out in relation to curriculum teaching, resource platform, innovation mechanism, and analyzes the reasons for the problems.The practical path of talent cultivation from the three aspects of demand generation was puts forward, link construction and guarantee mechanism, and explores a series of feasible methods and practical practices in combination with equipment intelligent talent cultivation and discipline construction, which provides specific ideas for carrying out military equipment intelligent talent cultivation under the background of new engineering, and also provides some reference for promoting military innovative talent cultivation under the background of new engineering.

Keywords: Military equipment · intelligence · talent training · innovative practice

1 Introduction

With the rapid development of new theories and new technologies such as cloud computing, big data, the Internet of Things, mobile Internet and artificial intelligence, intelligent warfare has become the core driving force of a new round of military reform [1], and has led and pointed out the direction of training equipment intelligent innovation talents.

Specifically, in terms of concept, we should take winning the intelligent war as the demand to lead the innovative cultivation of intelligent talents; In terms of structure, pay attention to the combination of theory and practice, the combination of in-class and off-class, the combination of battlefield and playground, and provide a new platform for intelligent talent innovation and practice [2]; In terms of mode, explore the innovative ability training mode of new equipment intelligent talents that integrates training and war, military and civilian, and institutes; In terms of quality, we should set the goal of training new talents who can adapt to the new military reform and intelligence in the future faster; In terms of system, we should build and constantly improve the curriculum system, platform system, performance and training system and institutional system for the innovative practice of equipment intelligent talents [3].

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2 Analysis on the Current Situation and Problems of Equipment Intelligent Innovation Talent Training

Firstly, there is insufficient demand traction in practical teaching. Taking the teaching of some basic courses as an example, the setting of practical links is far from the actual combat, and the training of knowledge, awareness of war, and awareness of war are not strong, and even the design of some links and the training goal of military talents are getting farther and farther. However, for the teaching practice of professional courses, there is a lack of systematic teaching practice system design, and there are problems such as high repetition rate of practice cases, low attention to some combat training tasks, and difficulty in combat training.

Secondly, the comprehensive support of platform resources is insufficient. In recent years, a number of club platforms have been set up to try to guide students to improve their innovation ability through discipline competitions. But on the one hand, these clubs do their own things, and are not strong in comprehensive, joint and integration; On the other hand, the students' innovation practice lacks fixed activity places, and the joint innovation of military and industrial units lacks physical support.

Thirdly, the innovation mechanism is not playing a good role. In terms of innovative practice, students lack a continuous and powerful guarantee mechanism, project support, financial support, and achievement transformation lack rules and regulations, and students' innovative achievements are not sustainable enough to be bigger and stronger, let alone applied to the front-line transformation of the army. For example, the innovative semi-finished products made by the previous students are often abandoned by the next students, or are repeatedly selected for research, resulting in a waste of resources. The reason for these problems lies in the practical teaching system and the innovation guarantee mechanism. Therefore, it is necessary to explore and practice from the following four aspects: the construction of teaching practice system, the traction of discipline competition projects, the support of scientific research project platform, and the guarantee of innovation practice mechanism, and combine the "university students' innovation and entrepreneurship training plan" with the cultivation of military intelligence innovation ability to strengthen the military innovation practice activities of chemical scientists; Establish a series of scientific and reasonable guarantee mechanisms in terms of project demand generation, innovation practice guarantee, innovation project inheritance, innovation achievement transformation, etc., and continue to promote the cultivation and improvement of innovation ability of engineering talents.

3 Analysis of Practical Countermeasures for Training Innovative Talents with Intelligent Equipment

3.1 Focus on Intelligent Warfare and Propose Innovative Demand Generation Methods

From different dimensions, build the demand generation system of war training task-innovation capability-curriculum system-knowledge skills, establish the view of equipment intelligent talent innovation capability cultivation based on the principle of "from

macro to micro, from task to capability, from battlefield to classroom", and implement the construction of relevant models, so as to realize the standardization and standardization of the demand generation process of innovation practice capability [4]. The intelligent innovation talents of the armed police equipment are divided into three objectives in the ability dimension: intelligent operation, intelligent support and intelligent maintenance, and three courses in the course dimension: computer, intelligent control and military specialty. The time dimension is divided along the undergraduate training cycle, and the ability boundary, innovation content and supported innovation projects are generated from the three levels of goal, project and platform.

3.2 Strengthen the Whole-process Innovation and Construct the Teaching Practice System

Under the new engineering conditions, the requirements of engineering practice are becoming higher and higher, and practice teaching is more pervasive in all aspects of undergraduate training. Therefore, it is necessary to establish a whole-process practical teaching system, including engineering cognition, ability training, comprehensive application and innovation training, starting from the links of course teaching, course experiment, production practice and graduation design, to get rid of the isolation between various practical teaching links and the current situation of disconnection with the "new engineering" engineering practice innovation concept, so as to build a coherent and complete organism, To form an inquiry practice teaching method characterized by "independence, inquiry and cooperation" [5]. Therefore, it is necessary to carry out multi-dimensional reform of curriculum practice teaching links by stages, themes and contents based on curriculum teaching. In the first stage of university, the theme is "laying a solid foundation", focusing on the basic experiment, programming, classroom discussion and group practice of professional basic courses, such as advanced mathematics experiment, circuit design experiment, computer program design experiment, etc. In the second stage of university, the theme is "arousing interest", focusing on case analysis, simulation experiments, design and production, and visiting and learning, such as optimizing program design in combination with equipment support process, visiting and learning typical equipment operation process, etc. In the third stage of the university, with the theme of "innovation experiment", through various disciplines competitions led by the club, combined with modular practical teaching such as military practice, scientific research projects, independent innovation, etc., to stimulate students' enthusiasm for innovation and carry out innovative exploration practice. In this regard, we should focus on relying on the clubs and scientific research platforms built at the university levels, such as guiding students to participate in the "Mechanical Innovation Club", "Unmanned Equipment System and its Operational Application Innovation Club", and supporting students to join the scientific research team through the tutorial system. In the fourth stage, with the theme of "comprehensive innovation", combined with graduation topic selection, students' ability of topic selection, innovation integration and application around equipment intelligence will be comprehensively improved. The specific implementation process is shown in Fig. 1.

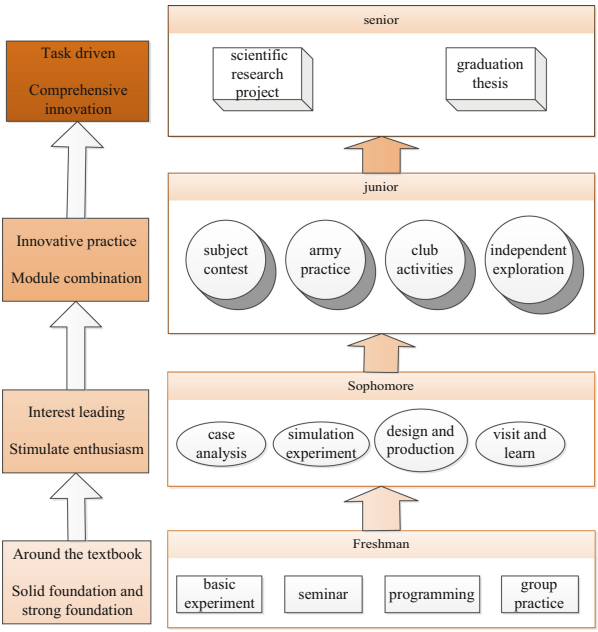

Fig. 1. Schematic diagram of the construction of equipment intelligent innovation practice link system

3.3 Implement Supply-side Reform and Guide Students to Carry out Innovative Practice

In the reform of the new engineering talent training model, innovative practice is undoubtedly an important breakthrough and entry point, and the open and convenient, cross-integration, independent innovation site, environment and atmosphere are its important support. Therefore, it is necessary to implement the supply-side reform of equipment intelligent innovation practice to guide and support students to carry out innovation practice [6]. Here, we will focus on the two aspects of discipline competition and scientific research projects.

Discipline Competition Traction

Centering on the basic idea of "unified, new, integrated and deep", actively explore the formation of an all-member, normalized, multi-level and sustainable innovation mechanism, guided by war training needs and discipline competitions, supported by student clubs and in the form of multiple collaborative innovation. See Fig. 2 for details.

Scientific Research Project Support

First of all, classify the current scientific research projects according to the knowledge structure, ability level and interests of the students, accurately guide the students to actively participate in various scientific research projects, and improve the popularity and depth of equipment intelligent ability quality; Secondly, students are required to participate in certain scientific research projects at the learning stage of professional courses,

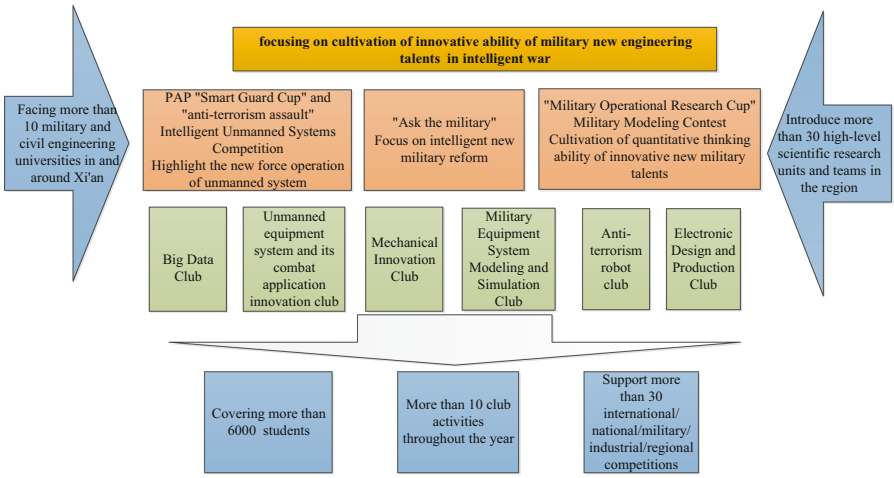

Fig. 2. Schematic diagram of equipment intelligent chemistry competition system construction

and evaluate their performance in combination with professional courses and club competitions, so as to strengthen the training of students' intelligent innovation ability and corresponding skills. Third, strengthen the guidance of the graduates' graduation topics, combine the current needs of the war training tasks, conditionally decompose various scientific research projects into a series of optional topics, and encourage, support and track the transformation of their research results in the army [7].

3.4 Focus on Sustainable Development and Form a Guarantee Mechanism for Innovative Practice

In order to ensure the smooth development of students' innovation practice and maintain the sustainable development of talent innovation, while building the above theories and disciplines, it is necessary to put forward feasible and effective guarantee systems from the aspects of project guidance, demand docking, project application, financial support, achievement transformation, etc., and really build a demand platform, data platform, system platform and exchange platform for talent innovation ability training in equipment intelligent chemical engineering, Fully ensure the scientific, reasonable and sustainable practice and management of military intelligence innovation, and the remarkable benefit of mechanism innovation [8].

Course Teaching Practice Mechanism

Build the teaching practice mechanism of equipment intelligent innovative talents curriculum based on PDCA cycle [9], develop a complete generation and management mechanism of student intelligent curriculum practice, and divide the curriculum innovation practice management into four stage: plan (P), do(D),check (C) and act(A).

The plan (P) stage mainly ensures the standardization and institutionalization of the whole process management of curriculum practice development, curriculum practice construction and curriculum practice implementation through the implementation of

curriculum practice demand generation, curriculum practice evaluation and curriculum practice early warning;

The do (D) stage implements the management and construction of various teaching innovation practices of curriculum normalization;

The check (C) stage effectively evaluates the quality of the innovative practice of curriculum teaching by means of online evaluation of curriculum practice, supervision experts' listening to the course, and organ teaching evaluation, and carries out traceability analysis by means of fishbone diagram analysis, human-machine and object method ring analysis, and research analysis;

The act (A) stage continuously circulates to realize the continuous improvement of the quality of curriculum teaching innovation practice through improvement and effectiveness verification on the basis of checking problems and tracing.

Achievement Transformation Application Mechanism

According to the education and training objectives of the trainees who will take up their posts immediately after graduation, relying on the equipment innovation talent education practice platform, we will create a group of high-quality undergraduate tutors and practical teaching projects, comprehensively consider the needs of the military for future military equipment innovation talents, improve the source of scientific research and the ability to guide innovation, connect the operational needs and teaching practice project design, strengthen the graduation topic generation system, and promote the integration of teaching and scientific research with the needs of the military, It will form a virtuous circle of military demand, scientific research, back-feeding teaching and achievement transformation [10]. For example, the equipment items developed by the trainees will be put into trial use in the army, and relevant funds will be actively applied to support the subsequent upgrading and improvement to form specific applications.

4 Conclusions

From the perspective of new engineering, there is a new definition and goal for the innovative and practical needs of equipment intelligent talents. This paper puts forward a systematic theory and method of generating demand for military intelligence innovation and a system of curriculum teaching practice to build an effective mechanism for sustainable development. Integrating innovation education into the starting point and goal of equipment "new engineering" construction is not only to promote students' innovation practice, but also to promote students to develop innovative and entrepreneurial thinking and values while mastering the cutting-edge knowledge and ability of equipment intelligence, so that they have innovative and entrepreneurial spirit, critical thinking ability, problem solving and decision-making ability, team ability, adaptability and lifelong learning ability. Therefore, we have put forward a systematic theory and method of generating demand for military intelligence innovation, formed a set of curriculum teaching practice link system, planned and established a practice platform to connect all kinds of software and hardware resources, built a series of effective mechanisms for sustainable development, and truly built a demand platform, data platform, system platform and communication platform for cultivating the innovative ability of military

equipment intelligent chemical talents, It fully ensures the scientific, reasonable and sustainable management of the platform, and the mechanism innovation benefits are significant. The above theories, methods, platforms and mechanisms can be popularized and applied in relevant universities after adaptive transformation.

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