

Discussion of the Training Strategy for Aerospace Professionals in the New Era

YIN Xueai^{[a],*}

^[a]Lecturer, College of Aeronautical Engineering, Binzhou University, Binzhou, China.

*Corresponding author.

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Abstract

The competition between countries and industries in the new era mainly focuses on the cultivation of talents and the competition in creativity. This important period of new engineering development and the critical moment of educational transformation, the training of innovative, outstanding and characteristic talents has created new opportunities and challenges. It is therefore urgent to reshape, transform, optimize and perfect the talent cultivation strategy with professional characteristics, characteristics of the times and industry demands from cultivation schemes, cultivation modes and cultivation targets according to the development of aerospace specialty, industry and enterprise.

Key words: Aerospace; Specialty construction; New era; New engineering; Talent training strategy

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INTRODUCTION

"In order to implement the Outline of National Medium- and Long-Term Plan for Education Reform and Development (2010-2020) and the Outline of National

Medium- And Long-Term Talent Development Plan (2010-2020), the Ministry of Education launched the Outstanding Engineer Education and Training Program in June 2010." This is the key requirement to focus on national construction and reshaping the new path in engineering education. This aims to cultivate innovative, outstanding, characteristic and application-oriented talents with high quality and high skills. This is not only the requirement of the times and development expectations of aerospace specialty within the industry, professional development and industrial progress, but also the inevitable requirement to serve national strategy.

1. ADJUSTMENT AND IMPROVEMENT OF THE TRAINING PROGRAM IN 'GOOD QUALITY AND STRONG SKILLS'

The talent training program is related to implementation and operation of talent training and daily teaching within colleges. It is a systematic, scientific and programmatic document intended to guide, which directly determines the process, objectives and quality of talent training. The main goal of personnel training in aerospace specialty in the new era is to cultivate innovative, outstanding and characteristic talents of high quality and great skill. Skills, scientific research and innovation are the main focal points of talent training. In this regard, the first move is to adjust and improve the core part of talent training: the training program. The adjustment and improvement of the training program requires a reasonable, thorough and comprehensive transformation from a traditional education program to a modern one.

1.1 Survival of the Fittest: Strengthening Crisis Consciousness and Establishing Competition Mechanisms

The reform and construction of the talent training program for aerospace majors in the new era should focus on

changing the traditional theoretical teaching mode and emphasizing the practical value and guiding significance of practical teaching, as well as adjustment and improvement with the times and practical industry needs. For example, the 'Aircraft Power Engineering Training Class' set up by Nanjing University of Aeronautics and Astronautics focuses on cultivating engineering talents with distinctive characteristics and selects and trains talents with clear assessment mechanisms and elimination systems. In this way, the talent cultivation strategy and long-term mechanism of survival of the fittest came into being. The key point of the elimination system is to enhance students' sense of crisis. In the process of establishing a benign competition mechanism, it can not only optimize the students, but also exert certain pressure on students. In this process of continuous competition, pressure can be transformed into motivation, thereby training students' minds and enhancing their professional skills.

Simultaneously, we should actively promote the integration of industry and education, and closely connect with the aerospace industry. On the basis of symbiotic development, we should create a platform for students to study, exercise and experiment. While improving the collaborative innovation mechanism, it is also necessary to enhance students' competitive awareness and expand competition in the school field to the enterprise practice process of 'actual combat drills'. Thus, we can truly strengthen students' sense of crisis and competitive consciousness, and we can also more objectively, fairly and comprehensively assess the talents through the application and innovation of technical skills.

1.2 Pay Attention to Practice: Improving Comprehensive Ability and Technical Skills

In the new era, the goal of personnel training of aerospace specialty is to cultivate a group of highly skilled professional engineers with excellent innovative ability according to the development direction of the specialty and the standards at home and abroad. 'At the undergraduate level, the Accreditation Board for Engineering and Technology (ABET) and the Federation of European Engineers' Associations (FEANI) both proposed that engineering graduates must possess 12 kinds of knowledge, skills and qualities, including innovative thinking, humanistic cultivation and other comprehensive qualities.' Therefore, professional talents meeting international standards must possess comprehensive qualities in knowledge reserve, technical skills, professional accomplishment, innovative thinking and other aspects. In addition to the requisite theoretical knowledge, we should pay attention to the important role of practical training in enhancing students' comprehensive ability. In particular, the training program for the related majors, which aims to train engineering frontline technical personnel and aviation engineers, should emphasize

the practical links within enhancing practical training experience, such as curriculum design, enterprise practice and project cooperation. This has important guiding value in improving students' technical skills and enhancing their future career experience.

2. REFORM AND OPTIMIZATION OF THE TRAINING MODE: 'COMPREHENSIVE AND THREE-DIMENSIONAL' TRAINING MODE

The reform and optimization of the training mode is instrumental in the overall improvement of talent training level. A training mode with distinctive professional characteristics, advanced educational concepts and remarkable reformative effects is the key to talent cultivation in the new era, and an important guarantee for the implementation of talent training strategy.

2.1 From Point and Surface: To Comprehensively Promote the Adjustment and Reform of the Training Mode

In the new era, the talent training mode should be reformed in a thorough manner. It is necessary to promote the coordinated transformation and synchronous adjustment of education mode, means, concept and thought. The focus of talent cultivation should switch from the traditional theory inculcation mode to the practice-oriented modern talent training mode, so as to cultivate talents with professional qualities and strong comprehensive abilities. We should comprehensively promote the reform of the training mode and the optimization of the curricular system. Under the guidance of the system for strengthening the shaping of new engineering majors, we should innovate the talent training mode and strengthen the exchange and cooperation between schools and countries. We should also introduce, absorb and share high-quality education resources, so as to adjust and optimize our own training mode timely and continuously, and consolidate the talent training strategy across professional fields.

2.2 From Simple to Complex: To Create a Comprehensive and Three-Dimensional Training Mode

The traditional and obsolete education mode mainly based on theoretical indoctrination has ceased to be appropriate to the personnel training mode in the new era. For Aeronautics and Astronautics majors in particular, we should actively explore the teaching mode that best meets their professional needs. Experiments, scientific research and technical achievements should be integrated into theoretical teaching content. While ensuring solid theoretical teaching, it is also necessary to strengthen experimental teaching and practical

training. One must create a comprehensive and multi-dimensional teaching mode through training methods that include interactive teaching, cooperative teaching and open teaching. At the macro level, we need to grasp the general direction of the training mode based on national policies, regional development and industrial structure, and talent training should take into account the needs of industry. At the medium level, we should objectively understand and recognize the policy and structure of the national education system. At the micro level, we need to continuously, steadily and solidly promote the construction of aerospace specialty and the innovation of talent training strategy under the new engineering system.

3. CUSTOMIZATION AND TRANSFORMATION OF THE TRAINING OBJECTIVES OF “INDIVIDUALIZATION AND CONCRETIZATION”

The talent cultivation strategy for aerospace majors should focus on the innovative and application-oriented talents with high skills and good quality required by the industry in the new era. Therefore, the training objectives should reflect the individualization and concretization in line with the professional characteristics and industry needs. We should change the old unified training mode, focusing instead on individual differences from student to student. We should begin from the individual standard of students and teach according to their aptitude. We also need to start from the students' own strengths, to actively guide them and stimulate creative potential.

3.1 Teaching Students According to Their Aptitude: Focusing on Individual Differences Between Students

At present, the primary problem facing the domestic aerospace field is the serious shortage of innovative talents and high-end technical talents. In light of the current situation, the key to solving this problem is to teach students according to their aptitude. We should focus on the individual differences between individual students, providing suitable tutors for each student, and developing appropriate and personalized training programs and development plans. First of all, the college should actively cultivate and introduce excellent academic and technical tutors. With the help of tutors' academic self-cultivation, technical ability and scientific research ability, the college should build a solid and well-balanced teaching team for cultivating outstanding talents. This is the basic premise and an important guarantee of teaching students according to their aptitude.

Secondly, we should implement the tutorial system. According to the students' own strong points, we should carry out the individualized training program and education mode in line with individual potential.

We should fully combine all the learning and exercise opportunities after class, thus enabling each student to obtain more practical exercises and self-development opportunities according to their own situations, interests and specialties. Furthermore, tutors should be competent in using a variety of educational methods and in formulating education programs according to differences between students.

3.2 Good Guidance: Inspiring Students' Creative Potential

The purpose of guidance is to allow students to fully recognize themselves and explore their potential. It is necessary for the tutor to play a leading and guiding role in this process, so as to tap into the potential of students and support their creativity to the greatest extent. Tutors' guidance of students should be based on mutual respect; they should both actively encourage and positively educate students, equip them with a positive attitude and cultivate their self-confidence, autonomy and self-improvement. The important task of tutor guidance is to correctly guide the students' learning direction, skills training and competitive pressure, so as to help students understand and liberate themselves, as well as stimulate their potential. Tutors should often communicate and interact with students, answer their questions and assuage their doubts, encouraging independent study, coordination and cooperation, exploration and innovation. They should also assign research topics to students and establish project groups. It is also necessary to train students' design, operation and cooperation, so as to cultivate professional skills with the practice mode that most closely mirrors a real project. Tutors should stimulate competitiveness, cooperation and creativity, so as to give full play to the real value and training advantages of the tutorial system.

CONCLUSION

To sum up, the cultivation strategy of aerospace professionals in the new era should advocate the cultivation of excellent professionals in new engineering. It needs to inherit the reasonable, systematic and specific system structure that has been considered, verified and solidified in the previous training strategies. But it should also explore, innovate and improve the new strategy, system and scheme of talent training for occupation and future that meet the requirements of new engineering development and those of the times based on market requirements, industry needs and professional construction.

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