Research on the Training Mode of Aerospace Talents in Colleges and Universities

Shang Lin, Yang Qiong
Xi'an Aeronautical Polytechnic Institute, Xi'an 710089 China

Abstract. The aviation industry is a symbol of a country's strength in science, technology, economy and national defense as well as its industrialization level, and it is a strategic industry of the country. At present, students trained in China cannot meet or match the needs of enterprises, in terms of both the professional level and professional skills. Therefore, the training of aerospace talents in colleges and universities is very important. In the current environment of China, it is extremely significant to cultivate aerospace talents with the purpose of "developing the aerospace industry to serve our country, strengthen the army and enrich the people". Only in this way can we better meet the needs of enterprises for talents and deliver excellent and innovative talents for enterprises, providing "fresh blood" for them.

Keywords: aerospace; distinctive talents; training mode.

1. Overview of the Training Mode of Aerospace Colleges

In order to meet the needs of the development of the market economy, the employment method has gradually achieved "direct contact between supplying and demanding parties", and the employer has the right to choose. Therefore, the employment of graduates in aerospace colleges is no longer "closed" but "open", no longer "ideal" but "pragmatic", no longer "invariable" but "dynamical", no longer "only paying attention to survival" but "attaching importance to development". These changes help students adapt to the fierce competition in the talent market and also bring new challenges to aerospace colleges.

1.1 Characteristics of Talent Training in China

Special attention has been given to talent training. Colleges and universities generally implement the credit system. Students have to receive mid-term test and some of them are eliminates rationally. Students who have completed credits are allowed to graduate in advance. The schools also offer student loan and scholarship. In addition, they also undertake the task of selecting outstanding military talents for the country and reserving officers.

1.2 Characteristics of Talent Training in Other Countries

Teachers are required to participate in internships in manufacturing enterprises, and thus they are generally equipped with theoretical knowledge, practical experience and advanced teaching concepts, which is helpful to cultivate students' self-confidence. Schools also invite professionals from time to time to participate in the preparation of teaching materials, put forward reasonable suggestions and help teachers improve their teaching methods and teaching techniques. In addition to strict management of students and the development of standardized assessments, they provide opportunities for students to participate in research work with teachers. This kind of operation can make graduates not only have solid theoretical knowledge, but also have hands-on ability and the skills in practical work. Skilled operating skills enable students to not only have valuable practical experience, but also help them to adapt to new work soon after graduation, and thereby they can grow into outstanding persons and technical talents in the enterprise or group.

1.3 Comparison of Domestic and Foreign Schools

Through the comparison of domestic and foreign institutions, the author found that foreign colleges have their unique features and advanced methods in various aspects, including the teaching

quality, scientific research strength, curriculum, student practice, teaching philosophy and teaching methods. And many of them are worth learning for us.

2. The Development of Teaching Development in China at Present

At present, aerospace colleges are paying more and more attention to the construction of the teacher team, the cultivation of young teachers and the implementation of related programs. At the same time, innovation is also promoted in various aspects, such as distinctive specialties, characteristic experimental platform, featured courses and teaching materials.

2.1 Establishing the Special Quality Education Course based on Aerospace Culture

The main content of school education and teaching activities is centered on various courses. It is practical to combine the high-quality teaching resources with the scientific literacy education and humanistic spirit of the aviation university, so as to establish multi-industry and cross-disciplinary teaching, special lectures and comprehensive cultural quality education courses with the characteristics of aerospace. It is also feasible to offer elective courses and some other courses that combine theory and practice, which can greatly enhance students' hands-on ability under the premise of basic lectures.

2.2 Practical Activities based on Scientific and Cultural Activities

Some campus cultural activities in different themes can be carried out on campus, such as “Motherland in My Heart”, “Singing Classic Songs”, “Spring Life”, “Summer Rhyme”, “Autumn Dance”, “Winter Spirit”, and so on. School clubs can also organize activities such as “Campus Art”, “Aerospace Science and Technology Festival” and “Art Festival of College Students”. These activities can be once a week or once a month, with the purpose to enrich students' after-school life.

2.3 Constantly Opening up Space for Practice to Lay a Solid Foundation for Aerospace

In addition to laying stress on the practical activity in campus, colleges and universities are supposed to increase its efforts to cooperate with modern enterprises and R&D institutions, so as to expand the practice space for practical teaching by building practice bases and laboratories. It is a good way for schools to join hands with companies to establish internship bases. For example, schools can establish long-term and stable cooperative relations with some large enterprises and group companies, so that students can directly go on a field trip in these places. They can also work with companies to build laboratories together. In this way, they can have some laboratories with high technical level and equipment grade. If aerospace colleges cooperate with research institutes, some new specialties could be explored, such as Aircraft Manufacturing, Aircraft Design, and so on.

3. Analysis of the Status Quo of Distinctive Talent Cultivation and Market Demand

3.1 Status Quo

The graduate quantity of aerospace colleges does not match the talents required by related enterprises currently. This is reflected in the fact that the supply of knowledge-type talents in some areas is more than the demand while the supply of this kind of talents in other areas is far from sufficient for employers. In addition, the relatively backward concept of some enterprises and the too high expectations of students for job are also the reasons for the shortage and surplus of personnel.

With the continuous development of the market economy, the training of talents in universities should also be matched with it. Colleges and universities should cultivate more students with solid basic knowledge and strong practical ability, namely, application-oriented talents and inter-disciplinary talents. When graduates step into the talent market, they must accept the competition in the market. In a market full of diversified and fierce competition, lack of distinctive competitive

advantages is very unfavorable for graduates. When recruiting personnel, the employers often consider whether the candidate have work experience, whether he/she has good comprehensive quality and whether or not he/she has the ability to communicate with others. In this context, students of aerospace colleges should have better thinking of their employment after graduation.

At present, students lack the opportunity to practice in the international arena. Domestic colleges and universities seldom have opportunities to realize powerful international cooperation. Therefore, students cannot absorb and learn from the advanced knowledge and technology of foreign companies nor can they broaden their horizons, and this has limited their development. Therefore, it is imperative to reform the existing talent training model and cultivate international aerospace talents. On the other hand, students should also apply what they have learned and try their best to realize creatively studying and applying. It is a wrong way to learn departing from application. In other words, students not only need to learn theoretical knowledge but also test what they have learnt in practice.

3.2 Analysis of Market Demands for Talents

The reform of college education is relatively backward compared with the market demand for talents. The times are developing and the society is constantly making progress. Especially in the market economy, the demand for talents is getting higher and higher, and the profession is also divided more and more refined. These are closely related to the reform of higher education. The reform of education in colleges and universities is imperative. This is because there are contradictions among college curriculum, the cultivation of talents and the market of socialist talents. At the same time, the training objectives and training plans of the schools always lag behind the needs of the market.

3.2.1 The Market has High Requirements for the Professional Quality of Talents

In recent years, enterprises have proposed increasingly high requirements for the culture and professional knowledge of talents. It is undeniable that the academic performance is still an important indicator for enterprises to measure the quality of a college student. However, the ability of technological innovation, dedication and responsibility is also intrinsic qualities of talents, and they are also the factors increasingly valued by enterprises.

3.2.2 Moral Quality is Becoming an Important Measure of Market Demand for Talent

Professional skills are an important measure standard of enterprises to talent. In addition, enterprises more highlight the moral quality of a person, namely, the character. As an old saying goes, good character is more important than the ability to do things. When interviewing a candidate, enterprises usually take into account his character first. For an enterprise, the team awareness, communication skills, relationships with others, spirit of cooperation and will quality of an employee are important factors.

Psychological quality is especially important in talent selection for an enterprise

Psychological quality is very important for a college student and even more important for an enterprise. When a person can temper himself and constantly adjust his own state in a tough environment, he can maintain a normal state of mind no matter when and where. A person who is energetic, motivated and good at working with others is more likely to succeed.

3.2.3 Learning Ability is a Factor Standard of Market Demand for Talents

There is often a gap between the professional and theoretical knowledge that college students learn and the actual needs of enterprises, and thus graduates are supposed to have a good ability of learning. They need to constantly learn at work and comprehend some knowledge skills that they have not learned or have not mastered, so that they can integrate into the new work environment better and faster, thereby adapting to the development of society more quickly. In addition, good learning ability is also the source and driving force for the innovation and development of an enterprise.

4. Ways and Suggestions to Solve Problems

4.1 Spiritual Culture

Students of aerospace colleges and universities should uphold the principle of plain living, hard struggle, unity and working hard to consolidate national defense. It is necessary to guide students to establish the aspirations of serving the country through working in the field of aerospace industry. Schools can organize a series of activities with the theme of patriotic education and invited aerospace talents to give lectures and reports. For students, face-to-face exchange of experience and encouragement can promote them to learn knowledge and skills harder, and by this way they will be more willing to serve the aerospace industry in the future. This is also a way of the intergenerational inheritance. It is also feasible to hold meaningful activities with aerospace characteristics, such as debates, forums, drama performances, speech contests, etc. It is necessary to take science and technology as a carrier to carry out cultural activities, so that the concept of national defense can be deeply rooted in the hearts of student. This will be helpful to build a good platform to cultivate brave, innovative and dedicated talents for modern enterprises.

4.2 Curriculum and Education Reform

The curriculum should be adapted to the training goal of talents in order to better adapt to the needs of market. First of all, there is a need to expand the knowledge of students. It is not enough to study the knowledge listed on books, so it is necessary to cultivate students' learning ability and teach them to delve knowledge or learn knowledge by themselves. Only by combining theory with practice can students broaden their horizons and knowledge to better adapt to future jobs and social needs. Students with good learning ability can adapt to the needs of their work quickly after graduation, regardless of in any enterprise and at any position.

Secondly, it is important to strengthen the comprehensive knowledge of students. Skill training is to adapt to social development and solve technical problems. It is no doubt that there is a need for special talents in a single profession, but after all, talents of this kind are seldom needed. Therefore, colleges and universities should pay more attention to cultivating comprehensive talents, inter-disciplinary talents and application-oriented talents with solid foundations and strong practical skills. Students must continue to learn advanced technology and new knowledge of different countries, which requires them to increase the amount of reading and improve internal training. Furthermore, skilled use of computers and mastery of foreign language skills are also needed. It has turned out that, no matter which position or specialty a person is in, the two skills are very important and essential. Those who have these two skills have advantages in talent selection and competition at home and abroad. At the same time, it is necessary to overcome the problem of emphasizing theory while ignoring practice and emphasizing scientific technology and knowledge while ignoring skills. There is also a need to avoid the repetition of the teaching content and the appearance of overmuch theoretical course. The curriculum should meet multiple needs. Finally, the choice of teaching materials should be diversified. Therefore, colleges and universities should not only do systematic research, but also develop textbooks based on the characteristics of the industry and the needs of enterprises and students.

4.3 Practical Application

It is increasingly difficult for students studying in aerospace colleges to practice in an aviation enterprise. Therefore, it will be a good thing if some enterprises can provide students with opportunities for their internship, thus shortening the training time for aerospace innovative talents. At the same time, schools can invite aviation experts to give lectures and compile aviation textbooks to bring some of the most advanced and best scientific research results to aerospace colleges, so that students can learn more about knowledge and skills of the aerospace industry. Colleges and universities should also provide students with more channels to carry out internships and learning, such as practice bases and co-constructed laboratory laboratories.

4.4 Cultivation of Professional Talents

To cultivate innovative talents, schools should guide students to apply what they have learned into practice. It is necessary to make students put their thinking cap to analyze and study, so as to cultivate their consciousness of initiative. Based on the mastery of theoretical knowledge, students should apply boring knowledge into practice, constantly explore and innovate in practice, with the purpose of cultivating their own hands-on ability.

5. Conclusion

Talents trained in aerospace colleges must be in line with market demands in order to have competitive strength, and only distinctive talents can adapt to market demand. In response to the national strategic plan of "prioritizing the development of education and building a strong country of human resources", all universities must closely follow the work guidelines put forward by the educational planning program to "prioritize development, educate people, reform and innovate, promote fairness and improve quality". Therefore, only by developing a talent training model with its own characteristics can a college occupy an invincible position and make its due contributions to the comprehensive advancement of the scientific development of education. On the other hand, it is also important to cultivate a professional team of teachers. In other words, colleges and universities should improve the quality of teachers, make them more professional and provide them with more space for their future development. At the same time, teachers should also start from their actual situation to constantly improve themselves, rethink their work, discover and summarize the law, so as to constantly improve their overall quality. At the same time, teachers should also be fully respected in the process of cultivating, so that they can continue to study, innovate and have the ability to innovate and manage students better.

References

[1]. Deng Junxiang. The Characteristics of Canadian Aviation Schools and Its Enlightenment[J]. Vocational and Technical Education, 2006(2): (80-82).

[2]. Ye Zhifeng, Ji Honghu. A Brief Survey of Russian Aeronautical Higher Education [J]. Aviation Science and Technology, 2001(4): 13-15.

[3]. Peng Qiong, Tang Yuyuan. To Bulid the Aviation Higher Vocational Education with Characteristics Relying on the Industry [J]. Mechanical Vocational Education, 2003 (5): 9-10.

[4]. Yuan Qing. School-based Model of Cultural Quality-oriented Education in Universities of Science and Engineering in China [D]. Nanjing University of Aeronautics and Astronautics, 2008.

[5]. Ni Shiqing. From the Personal Experience to See the Cultivation of Talents in Aviation Colleges