

Research and Practice of Talent Cultivation Program Based on School-Enterprise Cooperation "Network Space Security Major"

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Abstract: With the rapid development of social economy, people have already entered the era of big data, and the problem of cyberspace security has become more serious. Nowadays, cyberspace security has become the first-level discipline of the country. Under such circumstances, it is necessary to establish a complete network security personnel training system and model. In this paper, the author takes the school-enterprise cooperation and cyberspace security as the starting point, and actively explores the research and practice of the cyberspace security professional training program based on school-enterprise cooperation.

1. Introduction

The so-called cyberspace security refers to a concept that guarantees the security status of cyberspace. The existence of cyberspace security requires a variety of security technologies to continue. For example, cyberspace security needs to be supported by information security and network security, as well as Internet security for assistance and maintenance. In recent years, China's information technology industry has developed rapidly. As a collection of all information, cyberspace faces many WeChat, and hacker attacks and privacy leaks will seriously affect the cyberspace environment. Living in the context of big data, the security of cyberspace is very different from the security of cyberspace in the past. Now, even without hacker attacks, cyberspace will become extremely transparent in the context of big data. Many colleges and universities have already set up cyberspace security majors, but it is undeniable that most of the school's related majors are computer and communication majors to train talents. The lack of a complete cyberspace security professional education system is not conducive to the cultivation of quality professional talents. Although a number of cybersecurity training institutions have emerged in the society, there is still no relevant certification system.

2. The training of cyberspace security talents

Living in the era of big data, the security of cyberspace is becoming more and more serious. Whether it is the cloud, the Internet of Things or the mobile Internet, there are more or less problems in many networks. There are different related studies on the network regarding different network security issues. For example, for the security of the Internet of Things, issues such as terminal device security and tag security have been raised. For cloud security, security issues such as cloud computing and cloud storage have been proposed. Finally, for the mobile Internet, some potential threats existed in it. Network security, terminal security and application service security are all security issues. If you want to cultivate high-quality cyberspace security talents in a large amount, you should not only analyze the problems from the direction of national planning, but also look at the cultivation status of cyberspace security talents from the perspectives of academic training and talent training. Be good at discovering the problems that exist and give the right solution according to different problems.

3. The status quo of cyberspace security personnel training in China

The rapid development of the network and the widespread use of the Internet have brought

convenience to the lives of the general public. However, today's cyberspace security issues are becoming more complex and increasingly rigorous. China's cybersecurity issue is not as important as other developed countries. The United States has created an information security academic talent center as early as the 1990s, and has developed a comprehensive network space talent training program. It is also necessary to sign a talent training program with many colleges and universities as early as ten years ago, and is committed to cultivating more talented people. In 2010, Japan also reached a bilateral cooperation with the United States on anti-hacking and formulated a strategy for network security. For these developed countries, the cultivation of cyber security talents has risen to the level of national strategy.

3.1 Social perspective

Looking at the status quo of cyberspace security talents from a social perspective, the public does not have sufficient awareness of cyberspace security, and the relevant cyberspace security management departments have not actively used public platforms such as Weibo and WeChat. Promote the security management of the network platform. Regarding the public's neglect of cyberspace security, it is the biggest loophole in the existing cyberspace security in China. The state has not invested enough energy to manage the space of the network platform. Once the public has been exposed, the public will not doubt its own reasons.

3.2 School perspective

As early as 2007, the Ministry of Education of China has officially approved the establishment of the "Teaching and Information Committee for Information Security Majors in Higher Education Institutions". In 2014, the number of cyberspace security talents required by many industry information systems and basic information facilities in China has reached 700,000. In 2020, China is expected to require 1.4 million cyberspace security talents. However, it is undeniable that many schools in China do not meet the requirements of the market for the training of relevant professionals.

In terms of social training in cyberspace security, China has invested much more energy than other developed countries, but its development speed is not lagging behind other developed countries, but it is faster than these developed countries. At the same time, many training models have been established, but management is really confusing. Mainly reflected in: China's cyberspace security training level is not high enough, excessive emphasis on technical training, but did not do a good overall planning; without good cyberspace testing technology capabilities, although students have learned solid theoretical knowledge, but can not actually The application of the opportunity, can not achieve the real application practice; when the cyberspace security training in China, the theoretical training and practical application are out of touch, there is no methodological teaching.

4. Network space security talent training system and model based on school-enterprise cooperation

If we want to further improve the security of cyberspace, we should also increase our efforts to cultivate cyberspace security talents and improve the comprehensive quality and professionalism of talents while formulating scientific management measures. To a certain extent, the number of cyberspace security talents and the quality of talents will directly concern the security of cyberspace in China. From the perspective of the composition and application of national cyberspace security capabilities, the relevant talents of cyberspace security can be roughly divided into construction development types, application types and capacity building application types. Throughout the various problems in China's current personnel training, the author will focus on three aspects: education, social training and talent evaluation, and sort out a relatively perfect cyberspace security talent training model.

4.1 Improve the education system and model

As the basis for cultivating network security professionals, the development of education systems and models needs to actively combine the characteristics of the cyberspace security talents in the era, and also pay attention to the actual development of students. Cyberspace security is an emerging and popular field. At this moment, the number of professionals is scarce, which means that the training of relevant professionals is extremely important. According to relevant statistics, it can be seen that most network hackers do not have high enough qualifications, but these people are generally very interested in the network. There are even many hackers who are actually primary school students. In order to better tap the talents of network security professionals, relevant departments should open up some special channels. For example, they can select high-quality talents through online competitions, and carry out subsequent training and management to make them safe in the network. More outstanding achievements in technology.

From the perspective of the school, in order to be able to deliver a large number of professional talents for cybersecurity related occupations. Schools should add cyberspace security-related knowledge to the curriculum of teaching, and should set up relevant courses in the primary and secondary schools so that students can acquire more professional knowledge as soon as possible. At the same time, schools need to establish a comprehensive selection system to stimulate students' learning potential, to recruit talented students, and to actively encourage these students to provide better learning opportunities for these students. The specific approach can be reflected in the following two aspects: First, the establishment of the discipline competition. The fundamental purpose of organizing these competitions is actually to further mobilize students' interest in cyberspace security in order to realize the cyberspace talent reserve in the middle school stage. In the setting of the competition topic, it is not appropriate to have difficult questions, and the difficulty of the test should be reduced a little, so that most students have the opportunity to participate. For the winner of the competition, the school should give appropriate rewards, which can further avoid the lack of young talent. Second, schools can establish training courses for ethical hackers to fundamentally enhance students' professionalism. The ethics training courses established must establish a strict training plan and management system. After all, moral hacker training has two sides. Once it is not well grasped, it is easy to train hackers who are not professionally qualified. This will be used by people with ulterior motives, which is extremely unfavorable for the security management of cyberspace.

From a business perspective, companies should reach in-depth cooperation with schools. Schools are the base for cultivating talents. What enterprises need to do is to provide convenience for schools in terms of funds and equipment. Only when they are highly coordinated can they lay a firm foundation for the development of cyberspace security talents. Enterprises can jointly organize training courses for summer camps and winter camps. The school provides theoretical knowledge and the company provides deep technical support. The coordination and cooperation between the two can provide systematic technical training for students' learning. In addition, companies need to invest a large amount of money as a cyberspace security development fund, which exists to support more students to learn cyberspace technology. Moreover, companies need to work with schools to develop a normative system to manage these funds in order to ensure that they can be applied to the implementation and maximize the value of the application.

4.2 Update the teaching method and provide a talent practice platform

Relevant schools should actively build multi-modal training mechanisms. In general, student interest is the biggest motivation for students to learn cyberspace safety knowledge. Schools should fully examine the actual learning situation of students and provide students with more practical training programs, which can help students to fully realize their potential and advantages. With the popularity of the Internet, the school's way of class should also change, from traditional classroom teaching to online community learning, for example, through micro-courses and MOOC. This kind of online teaching can effectively improve the passive learning situation of students. In the traditional classroom, students can only passively listen to the teacher's lectures. In this online

learning mode, even if students encounter problems that they do not understand, It is also possible to repeatedly open the online learning classroom for repeated learning. In addition, the school can also introduce more excellent teachers, provide students with better teaching resources, build an excellent learning platform for students, and enable students to better train after the students learn, so as to be better and stronger. The knowledge you have learned.

And related companies must provide a large number of talent practice platforms for schools and students. Be aware that cyberspace security is not virtual, and it has a very close relationship with actual needs. If you want to meet the actual needs of the society and the position of talent, it is impossible to achieve without a realistic learning and practice environment. Therefore, schools must cooperate with companies and rely on the power of enterprises to build more laboratories, which can provide students with on-campus practices. At the same time, companies must retain relevant positions within the company so that they can provide more practical exercise opportunities for students in the school so that students can maximize their knowledge during the school. Generally speaking, it is difficult for schools to provide enough funds to help students with their professional studies. At this time, enterprises need to realize their own capital value, and use special funds to help domestic students go to relevant universities abroad. Learning and research, learning more cash knowledge and cash technology, and contributing to the progress and development of cyberspace security.

4.3 School joint enterprise perfect talent evaluation system

The establishment of a unique talent evaluation system will enable us to further discover the problems students have in the learning process, formulate corresponding solutions according to relevant issues, and find ways to mobilize students' enthusiasm for learning. The formulation of this talent evaluation system should be carried out in two aspects. The school should evaluate the students' school-based learning, and the enterprise should also evaluate the students' practical exercises. The two evaluation results can be combined to help students. Better understand your own shortcomings and advantages. First of all, the school's evaluation of students should not be based solely on papers or subject items as the only evaluation criteria, especially as a hard evaluation indicator. In other words, the field of cyberspace security pays special attention to the practical application ability of students. The cyberspace security talents are not only theoretical talents, but also skill-based applied technical talents. Schools should focus on leading students to practice training. Investigate the actual combat ability of students in actual combat. Second, the evaluation of talents by enterprises needs to be carried out by professional internal staff. It must be noted that the evaluation of talents by enterprises cannot follow the computer science or the evaluation system of communication disciplines. All evaluation criteria must be related to the internal principles of cyberspace security, and the evaluation requirements need to be fully in line with national and industry requirements. Once the phenomenon that does not meet the industry requirements is found, the evaluation results will need to be repeated.

5. Conclusion

Cyberspace security has a great impact on national security. The rapid development of network and science and technology makes the training of cyberspace security talents more meaningful. The security of cyberspace has been added to the first-level discipline by the state. The training of relevant talents should be intensified. In the whole process, the power of relying solely on schools or enterprises is not enough. Only when schools and enterprises form cooperative relations can they be professional. The cultivation of talents and the further improvement of the professionalism and professional competence of talents.

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