Original Paper

Analysis of University Network Security Management and Countermeasures

Jinzhao Liu[1*]

[1] China University of Geosciences, Beijing, China

[*] Jinzhao Liu, China University of Geosciences, Beijing, China

Abstract

With the development and progress of science and technology, the Internet is widely used in every aspect of people's life. Chinese universities have gradually begun to apply the Internet. This facilitates the work and life of teachers and students. But the dual nature of campus network brings a series of threats to teachers and students. This paper states the problems and threats of network security management in colleges and universities. By putting forward the corresponding solutions and discussion, it provides theoretical support for jointly promoting the progress and development of network security construction in colleges and universities.

Keywords

University network security, management, Internet

1. Introduction

In recent years, with the wide popularization of the Internet, network information technology has developed rapidly. Chinese college teaching management gradually use information mode. As a new medium to disseminate information, network is widely used by teachers and students in colleges and universities. It becomes an important way to acquire knowledge and information. Colleges and universities use the Internet to form a platform for resource sharing and communication in many fields, such as administrative office, teacher-student interaction, academic discussion, teaching simulation, daily ideological and political education work and management, etc. Relying on the Internet platform, colleges and universities can carry out a lot of work faster, better and more convenient. Colleges and universities pay great attention to the construction of campus information. Through the integration of resources, information construction forms an integration to provide high quality, high efficiency

teaching and management platform for the majority of teachers and students in school. However, the increasing number of university network users has led to the gradual enlargement of security problems. For example, in recent years, cyber violence incidents caused by information leakage, fraud, campus loans and so on have emerged one after another. Colleges and universities should pay special attention to network security. Aiming at the problems existing in the network management of colleges and universities, the focus of today's network security management work is to orderly promote the construction.

2. Problems Existing in the Network Security Management of Colleges and Universities

2.1 There Is a Risk of Information Leakage in the Computer System

The computer system itself has certain security risks. Many computers in colleges and universities if not timely update the system or repair vulnerabilities, it is likely to be exploited by criminals. These criminals may use tampering webpage, hanging horse, dark chain, website back door, APT attack and other ways to attack college computers to obtain benefits. They steal college network information and even valuable teaching resources. Colleges and universities have a large group of students and strong information interoperability. The frequent occurrence of Internet information leakage and telecom fraud has become one of the key tasks endangering the network security management of colleges and universities.

2.2 Multi-Way Virus Intrusion Threatens the Security of University Network System

Computer viruses exist widely in the field of computer application. It is one of the reasons why the Internet security of colleges and universities is threatened. Viruses can spread, invade and destroy the university network system through file download, E-mail network transmission, web browsing and other ways. This has a bad influence on the normal teaching management of colleges and universities.

2.3 Network Information Is Complex and Full of Bad Information

The Internet has two sides. While it brings convenience to teachers and students, it also has certain dangers. There is a lot of information on the Internet, including pornography, violence, terror, gambling and other bad information. It will cause great harm to students' physical and mental health if bad information is spread through college network. This is also not conducive to college students to carry out daily ideological education management work.

2.4 The University Network Main User Security Consciousness Is Weak

The main body of university network is teachers and students. These people are huge and their information is easily leaked. At this stage, the consumption mode has basically completed the transformation from cash paper to network payment. Students often face real-name requirements when registering online banking, social platforms and applications. There are differences in the secret protection technology capabilities of each platform. Student personal information leakage, loss of the possibility and risk is extremely high.

Students face multiple risks. First, the lack of defensive psychology and the accidental incident. For

example, they use phishing websites, download virus files and browse the web to easily choose to remember passwords when logging in. This provides an opportunity for criminals. Second, students have a certain degree of curiosity and thirst for knowledge. In their pursuit of new things, they may adopt some behaviors such as "wall climbing" that threaten the university's network security. Thirdly, in the face of the complex network environment, some students are easy to be emotional. They don't have a good sense of what's really going on. They take aggressive actions such as human flesh search or human flesh attacks and use cyber violence, as well as illegal actions such as forwarding false statements and spreading slander. Fourthly, some college students are not mature yet. Due to their strong vanity, poor self-control, low ability to resist temptation, they have no accurate knowledge of their own economic strength and self-positioning. Incidents such as "campus loan" and "naked loan" occur frequently. This causes great harm to students physically and mentally. In addition, for college teachers, some non-computer professional teachers in the use of computers often ignore timely virus detection, repair vulnerabilities. By setting security password and other security links, the computer is easily invaded and thus causes resource loss.

2.5 The University Network Management Personnel Is Insufficient, the Technical Support Ability Is Limited

Facing the complex network environment, many colleges and universities almost have no professional network management personnel to carry out regular network maintenance work. Or network management personnel with limited experience and technical maintenance capabilities. At the same time, the entire campus network security management workload and heavy task. Under the condition of limited staffing, it is difficult to ensure the comprehensive maintenance of university network security. In addition, the university network equipment management has defects. This is mainly reflected in the unbalanced development of software facilities, inadequate daily maintenance and monitoring, and imperfect network security risk prevention methods and security mechanisms.

2.6 Some University Leaders Attach Insufficient Importance to the Network Management and Lack of Capital Investment

In recent years, colleges and universities have basically established specialized network centers. But they in the concrete implementation of the work in the process of the existence of some heavy scale light safety error. Some college leaders lack of computer and network knowledge and security awareness. These people only stay on the surface of campus network security management. They only pursue Internet speed and pay less attention to vulnerabilities, viruses and cyber attacks in the system. Most universities have not established and perfected a complete set of campus network security management system, as well as security software and system to prevent and prevent network vulnerabilities, viruses and network attacks. In terms of funds, some universities lack capital investment, can not timely update the computer equipment hardware, software, resulting in the network firewall defense ability is low. This gives criminals an opportunity to commit crimes.

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3. Countermeasures to Strengthen Network Security Management in Colleges and Universities

3.1 Intensify Publicity, Standardize Online Behavior and Pay Attention to Online Moral Education

Through courses, training, publicity boards, official public content push, questionnaires and other online and offline methods, publicity efforts will be intensified. Network security publicity and education will be incorporated into the daily management of colleges and universities. It does not regularly carry out network moral education and relevant legal knowledge education lectures. The school carries on the positive, the healthy psychological construction guidance to the student. This regulates students' online behavior to avoid violating laws and ethics in the process of using the Internet. Through the network moral education to improve the network security awareness of every teacher and student. By guiding students not to spread rumors, rumors, do not believe rumors, schools put an end to all malicious use of network resources and threats to the university network security behavior and events, and do law-abiding and moral netizens.

3.2 Pay Attention to Special Groups and Enhance the Awareness of Network Security Management of College Students and Teachers

In addition to the general student group, the special student group is also the university network security management needs to pay attention to the object. In order to prevent the students from releasing bad speech on the network platform due to excessive emotion, prevent the weak psychology from being used by criminals to spread harmful information, improper handling of personal lifestyle and approaching "naked loan" and other harmful events, student cadres should pay attention to the life and ideological dynamics of each student within the scope of management. They should report to the responsible teachers and colleges in a timely manner. Responsible teachers should hold regular meetings of student leaders and grade students. They should fully understand the life and ideological dynamics of each student, and formulate corresponding education programs for "problem students"; Colleges and schools should integrate the awareness of network security management into daily management work.

3.3 Improve the University Network Security Management Rules and Regulations

University network security management needs to rely on the corresponding rules and regulations to standardize. Should be in the national network security management on the basis of relevant laws and regulations, each university to develop and improve the school's network security management system according to the school's own characteristics. By clarifying the principles of use, it constrains the network behavior of teachers and students to regulate the management. At the same time, it should strengthen the network information monitoring and do a good job of emergency response for the record in the sensitive period. This ensures the normal and safe operation of the university network. In addition, the university network security reward and punishment system. The teachers and students who maliciously endanger network security shall be given corresponding punishments and the relevant informants shall be given corresponding praise according to the severity of the consequences.

3.4 Appropriately Increase the Capital Input, from the Personnel, Equipment and Technology to Ensure the Construction of University Network

The technical ability of university network security management personnel is very important to maintain network security. Colleges and universities should attach great importance to it, appropriately increase the investment of funds, select professional computer technicians, and regularly maintain the network of colleges and universities. Technical personnel responsible for network security maintenance should be regularly trained and assessed to improve their ability and level. At the same time, the purchase of advanced computer systems and application equipment, in hardware and software to ensure the stability of university network security management to improve network efficiency and safety factor. The school set up a special leadership review group and do not regularly spot check related technical personnel report the recent network situation to prevent problems when the dispute, "blame" phenomenon. By doing a good job of "tracing" regularly, the school can know the students' recent situation from the side. The main body of campus network security is all the teachers and students. Universities must pay more attention to prevent cyber hazards from being exploited.

3.5 Establish and Improve the Network Security Management System in Colleges and Universities

The university network security management should follow the principle of unified leadership and hierarchical management to establish and improve the university network security management system. Units at all levels need to designate specialists to be responsible for network security information maintenance. Take safety as the center, define the first responsible person to form the "protection-detection-response" mechanism. In the face of the characteristics of a large number of students in colleges and universities, we focus on the network security protection work in the supervision and detection. Adopt IDS, virtual local area network and other advanced technology to improve the protection measures. Sensitive information is detected through semantic analysis, modeling is based on LDA, and student dynamics are timely acquired through big data and other ways. More dangerous networks or platforms accessed by students are screened to ensure the efficient and steady operation of the campus network.

3.6 Establish and Improve the Information Network Connectivity of Colleges and Universities

Each university has its own advantages in network security work. First of all, it can realize the synchronous promotion of network security construction in colleges and universities through experience sharing. Secondly, colleges and universities should effectively communicate, help each other and work together. This is a win-win situation for all parties. On the one hand, it helps to solve problems quickly. On the other hand, it can also make relevant defense plans in time for the problems that do not appear but may appear. Finally, universities should cooperate for a long time. By working together to develop a safe, healthy and operational network system, they promote the management and construction of network security in colleges and universities nationwide.

4. Conclusion

All aspects of daily teaching, scientific research and learning life in colleges and universities are inseparable from the network. While providing convenience to teachers and students, college network has many deficiencies and hidden dangers. Network security is a major factor restricting the development of colleges and universities. Colleges and universities can strengthen the propaganda of campus network security, improve the rules and regulations of college network security management, appropriately increase the investment of funds to ensure the construction of college network and other methods. This will improve the quality of service for teachers and students, improve students' awareness of network security, and gradually promote the progress and development of network security construction in colleges and universities.

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