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Intelligent Management Platform into Equipment Construction Personnel Training Mode Exploration: A Case of Police Equipment Management Information



Abstract: - To strengthen the application level of intelligent equipment management information platform for police officers, combined with the relevant requirements of the public security organ, education department and other departments, this paper focusing on the personnel training mode in the field of police equipment management information based on the background of intelligent management application, the connotation of professional development and the current situation of professional demand are analyzed. Through the study of knowledge system, curriculum system, teaching mode and so on, the cultivation of students' skills and professional quality training are strengthened. The paper also discusses the existing problems in the aspects of the necessity, realistic demand, the promotion path and the evaluation of the school-bureau cooperation training mode. The model construction fully reflects the teaching needs of the police equipment management specialty in the information age, and establishes a professional ability talent training mode that matches the needs of the police equipment management professional posts.

Keywords: Intelligent management; Equipment construction; Actual combat teaching; Equipment management information; Personnel training mode.

I. INTRODUCTION

According to the requirements of the policy of "strengthening the police with science and technology", in combination with the State Council issued "the National Vocational Education Reform Implementation Plan", and the Ministry of Public Security and other ministries and commissions issued "the Reform of the Recruitment and Training System of Public security Professionals in Public security Colleges and universities Opinions" and other documents require that the characteristics of public security vocational education be given full play[1-3]. Aiming at training professional and technical police officers with theoretical knowledge and practical skills, a professional system with distinct characteristics of public security is constructed. The requirement of the practical teaching mode of the current public security work, further establishes the guiding principle of the strategic, basic and overall status of science and technology informatization in the public security work, and continuously strengthens the cooperation and education mode of the school bureau has become the hot spot of the current public security education reform[4-6].

With the application of internet of things, blockchain, artificial intelligence, satellite communication, system engineering and other high-tech and the increasing types of police equipment, the application of the intelligent police equipment management information system platform has been promoted. Through the integration of data resources and the use of artificial intelligence technology, the system platform can help public security organs achieve business process optimization, decision support and resource allocation and other aspects of improvement, which is an indispensable tool in the digital transformation of public security organs. How to combine the requirements of the Ministry of Public Security to better give full play to the advantages of information technology, police equipment management and security has become the development goal of police equipment management information professional construction[7-9].

Combined with the background of new engineering and the needs of public security departments, the China People's Police University puts forward the construction plan of police equipment management informatization. Based on the major of data policing technology, this major has strong applicability and practicality[10-12]. Through

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the effective integration of public security science, management science and information science and other disciplines, the multi-level and multi-dimensional school bureau cooperation talent training mode is carried out to cultivate application-oriented technical and skilled people with solid mathematical and equipment technology foundation, deep information technology application background, active innovative thinking in equipment management application, and strong actual combat ability of data policing. This can provide a solid career guarantee for students to adapt to the future work of public security, police, training and other business departments[13-15].

II. EQUIPMENT MANAGEMENT INFORMATION MAJOR CONSTRUCTION

With the increasing dependence of public security organs on equipment, the types of equipment and the degree of science and technology continue to improve, the demand for professional equipment and technical personnel is increasing. Police education is an important carrier for the delivery of high-quality police talents. How to cultivate new police talents for efficient application and management of police equipment has become a key issue[16-18].

A. Professional Post Demand

Through the inquiry of public security information, the visit and investigation of professional colleges, police security and science and information technology departments, the career direction of the required posts in the public security department is summarized[19-21]. The survey results show that the demand for equipment management is strong in the police security department and the science and technology department, with about 500 employees per year, mainly engaged in the construction, management, security and information construction of police equipment. The job requirements for graduates generally have the following responsibilities: planning position, mainly responsible for the construction and development planning of public security organs equipment, equipment demonstration and procurement. Management position, mainly responsible for demonstration of demand, procurement, quality testing, maintenance, scientific research plan, decommissioning and scrap equipment life management content. I am mainly responsible for equipment business training, technical services, and the construction of science and technology information platform. Through the investigation of the needs of equipment management talents in various public security departments, combined with expert demonstration and discussion, analysis of professional ability composition, determine the post construction plan, and further clarify the direction of professional construction of police equipment management informatization.

B. Professional Training Demand

In recent years, with the continuous development of science and technology, public security environment, traffic environment, immigration management, criminal cases and other police work environment, the existing police talent demand structure has also changed significantly, the demand for technical talents with application skills such as equipment management informatization has gradually increased, and at the same time, higher requirements for the comprehensive quality and ability of talents have also been put forward. Influenced by factors such as educational concept and educational method, there is an obvious mismatch between the talents cultivated by the school and the talents needed by the public security organs. As a complex of academic education and vocational education, public security education not only requires students to have a certain academic level and knowledge reserve, but also requires them to have the professional ability to quickly put into actual work. In this process of talent training, professional curriculum design, teaching mode and practice are inseparable from the effective operation of school bureau cooperation. The deep integration of the industry is the key element of the training of public security talents. From all levels of enrollment, training and employment, it is necessary to strengthen the development of applied education and cultivate applied talents on the basis of paying attention to ideological and political education. At present, there are no disciplines related to police equipment technology in the public security education system. From a global perspective, it is all public security technology and public security science. It needs us to carry out exploratory attempts, cooperate with the construction of new engineering, reform the situation that traditional public security technology is mainly outsourcing to enterprises, and highlight the training of public security technical talents, so as to realize a variety of talents and have certain technical identification ability.

III. PROFESSIONAL TEACHING MODEL

As a special vocational education, the key factor of how to construct a good public security specialty is the construction of curriculum system and teaching mode. Therefore, information and equipment management should

be designed globally, and each link should be designed clearly, so as to make the professional construction have obvious professionalism and times[22-24].

A. Curriculum System Construction

The training target of police equipment management information major is to adapt to the police equipment management, security and technology information construction and other work needs of technical talents. Starting from the professional orientation, combined with the employment needs of graduates is the basis of setting up the curriculum system. Through the analysis of students' basic theoretical knowledge, ideological and political courses and future career work content needs, the knowledge system that students should master can be obtained after decomposition. On the basis of full demonstration by experts from the public security department and education department, the curriculum construction system and specific content are determined. According to the content of the curriculum system, the content is decomposed into basic theory module, professional skills module, ideological and political module, innovation ability module and comprehensive practice module. Then, different teaching methods and modes are adopted according to different learning scenarios and learning contents. The content construction of the professional curriculum system is shown in Figure 1.

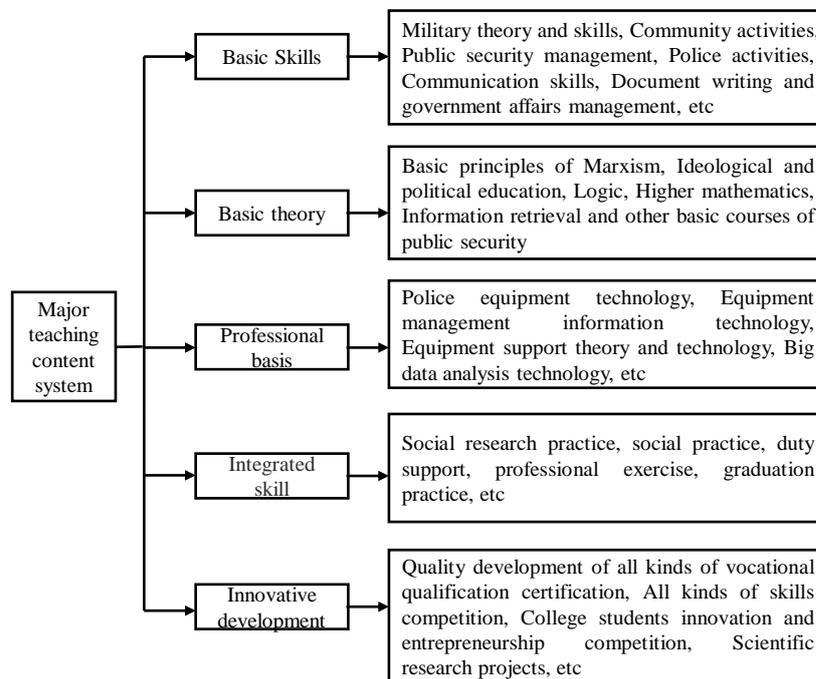


Figure. 1-Major curriculum system of police equipment management informatization

The curriculum system is the basis of professional construction. The work of public security departments is diverse, and the working environment is complex, and there are many contents to be learned. Therefore, teachers need to combine the training objectives to continuously strengthen the training of basic and practical skills.

Course construction pays particular attention to the integration of computer and other information technologies, especially strengthening the concrete practical application of public security informatization and big data, police equipment management information technology, artificial intelligence, police unmanned systems and other courses with obvious information technology, and strengthening the application of virtual simulation training technology in the course construction process, part of the course content is shown in Table 1.

Table 1-Curriculum information technology integration situation

Partial course	Part of the practical teaching content
Public security informatization and big data	Computer software and hardware application and data analysis search
Police equipment management information technology	Management information system design and related technologies such as the Internet of Things
Artificial intelligence	Design and application of artificial intelligence and related technologies
Police unmanned system	Police drones, robots and other system hardware and software design and operation

Through the teaching and practice of the above courses, the teaching practice needs of intelligent police equipment management system are realized, part of the intelligent police equipment management information system is shown in Figure 2.

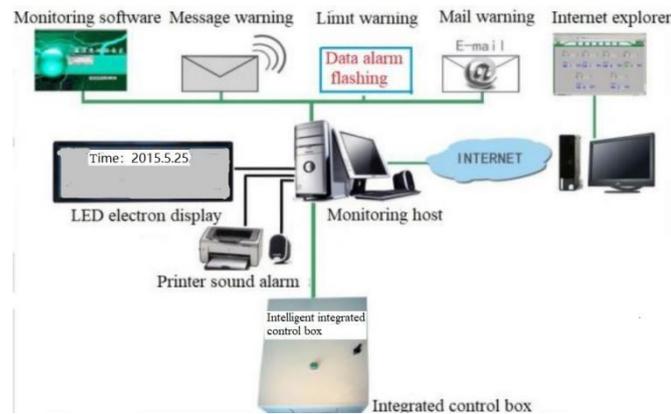


Figure. 2-Part of the intelligent police equipment management information system

1) *Teaching Staff Construction*: As the main implementer of educational work, the quality of teachers determines the quality of education. In order to better realize the construction of teachers, we should start from the following aspects: First, strengthen the construction of teachers' ethics and style, improve the ideological and political level of teachers through training, visits, discussions and other forms, so that this team of teachers has not only high level professional quality, but also noble moral quality. It can not only care for students, but also play a positive and innovative role for students. At the same time, it continuously improves the moral and skill quality construction of teachers, and further strengthens the curriculum construction. The course construction has changed from "ideological and political course" to "ideological and political course", so that every teacher can devote to the course ideological and political construction on the basis of having a full understanding of the ideological and political course. Second, improve the basic theory construction of teachers. The current professional construction personnel are from the original fire and public security majors, but there is still a partial lack of theoretical foundation, lack of familiarity and understanding of public security work, and have fixed thinking and dependence on the original discipline background, which is difficult to change for a while. It takes a certain amount of time to combine the theoretical knowledge of the discipline with the professional practice of police equipment management. This requires teachers to continue to in-depth theoretical research and practice can study, the police equipment work process and theoretical teaching in-depth combined research. Third, optimize the construction of practical instructors. By inviting public security police from the equipment support, management, science and information departments of public security organs as practical instructors, according to their practical work experience and needs, the curriculum content and teaching methods are designed together with theoretical teachers, so as to highlight the advantages of practical instructors in the aspects of public security work situation, task, mode and equipment. And strengthen teacher training to make the level of school teachers continue to close to the actual combat.

2) *Teaching Facilities and Resource Library*: As the key teaching tools of public security vocational education, teaching facilities and teaching resources determine the development direction and efficiency of teaching. Combined with teaching needs, the construction is mainly carried out from the following aspects: First, strengthen the contact and communication with the Ministry of Public Security bureau, ministries and related enterprises, strive for financial and policy support, on the basis of full demonstration by experts, and constantly improve the construction of teaching facilities and teaching resources, forming a strong guarantee for the implementation of teaching. Second, vigorously carry out the construction of teaching practice base, meet the basic theory and practice needs through campus construction, use school-school cooperation, school-bureau cooperation, school-enterprise cooperation and other ways to let students out of the school, school-school cooperation to fill the theoretical shortcomings, school-bureau cooperation to improve professional practice, school-enterprise cooperation to deepen technical support, which are conducive to the construction and development of the college. Third, according to the different focus of training, the use of modern technology and school bureau cooperation to build a rich teaching resource library, strengthen school bureau communication, the public security department of the sharable data into the teaching resource library, the development of micro-courses, MOOCs and cloud courses and other materials to create quality resources teaching data platform.

3) *Curriculum Evaluation and Reform*: The curriculum system of public security major has complex structure and obvious characteristics, so it is necessary to continuously improve the teaching content and ensure the teaching quality by combining the form and task of public security. Therefore, it is necessary to establish a more complete curriculum evaluation system to promote reform and construction by evaluation. The construction of curriculum system evaluation system, but also combined with the characteristics of college teachers, professional development trends, etc., mainly in accordance with the objectivity, justice, effectiveness of the three principles of system construction. In the evaluation process, it is necessary to establish a clear index system, collect, sort and analyze multi-dimensional and multi-angle data information to draw conclusions.

B. *Teaching Mode Construction*

1) *Combination of Multiple Teaching Methods*: Combined with different courses, different teaching methods are adopted to carry out teaching for theoretical teaching, online teaching and practical innovation teaching modules[25,26], which mainly includes the following parts, as shown in Figure 3.

First, theory teaching. Theoretical teaching mainly adopts classroom theory teaching, case scenario analysis, flipped course discussion, visit teaching and visual demonstration. The major of police equipment management information needs the college to closely combine the task and the work demand. At present, there is less thinking in the learning process of public security professional students, and they neglect the training and operation of the practical analysis ability of the college. Therefore, case scenario analysis should be further strengthened in classroom teaching, and the teaching method of flipped course discussion should be carried out for the problems existing in the work of equipment management and support, so that students can study the content and skills required to solve practical problems in depth. Then through the division of group discussion, visit learning and other means to solve the problems encountered in the case analysis, so that students realize the skills they need to master, carry out active learning, discussion learning, etc., teachers in the process to guide, summarize and constantly remind students to improve the direction of professional analysis.

Second, online teaching. At present, colleges and universities are carrying out the construction of large-scale micro-courses, MOOCs and cloud classrooms. Teaching activities through online network and video can promote students to use their free time for independent preview and review. Online learning mainly includes video learning, communication and discussion, online testing and other links. For the problems encountered in ordinary study and work, you can leave a message through the network at any time, and teachers can also better summarize and analyze students' questions. Understanding the general situation of learning also has a certain reference role for carrying out classroom teaching. Through online testing and teaching, it is also beneficial for teachers to convey the latest knowledge and cases to students, and understand the knowledge of students in time, so as to improve and supplement teaching content and methods.

Third, practice and innovation teaching. Public security practice teaching should highlight task-oriented, closely combine with actual combat, focus on training teaching places and bases inside and outside the school, and strengthen the resource sharing of the school, the school bureau and the school enterprise to jointly carry out the construction of teaching platforms. Teachers and students are encouraged to participate in project-based teaching, discipline competitions, skills assessment, etc. The new technology of the enterprise, the new needs of the public security department, the new development of the brother colleges and the practice of the professional construction of the school are integrated together, and the integrated teaching mode of "teaching, learning, practicing and fighting" is promoted. Strengthen the guidance of internship and graduation thesis in public security departments, encourage students to participate in all kinds of innovative design competitions and various professional certificate assessment activities, and establish an innovative credit system based on discipline competitions to ensure that discipline competitions carry out in depth and lasting.

Fourth, application of new methods. Give full play to the technical advantages of virtual simulation, effectively combine the theory teaching of police equipment technology with practical teaching, effectively supplement the theory teaching with virtual simulation technology, and solve the problems existing in the reality teaching in virtual teaching. Combined with the advantages of virtual simulation technology, the teaching process and program are designed to improve students' practical problem-solving ability. In the process of teaching implementation, firstly, the principle and use of equipment are introduced and analyzed, and then the use, operation and technical and tactical simulation drill are carried out by using virtual reality technology, and the problems existing in the use are analyzed, discussed and improved. Finally, the use of all kinds of equipment and technical and tactical application are operated and analyzed in real scene. Through the comparison of virtual and real, it is found that there are

problems, and the problems existing in virtual reality teaching are improved, which is conducive to improving the quality of teaching and improving the teaching process, and constantly improving the teaching methods and modes.

Fifth, the assessment method innovation. Change the original assessment methods to establish a better assessment and evaluation mode that can highlight the actual ability and professional level of students. The final theory test can only be regarded as a part of the assessment, which combines the ability test and performance of practical courses, innovative thinking ability, and ability test and performance in virtual simulation. By setting different assessment modules, the students' theoretical knowledge of equipment, practical application ability and technical and tactical application level are improved pertinently, and the scores of different parts are included in the total score. In this way, not only can the students' performance be scientifically evaluated, but also can strengthen the practical operation and team consciousness on the basis of consolidating the basic theory, improve the students' practical operation level and field application ability of police equipment, and finally realize the purpose of teaching, so as to facilitate the students to be better and faster into the police work.

2) *School Bureau Cooperative Practice Teaching*: With the demand of practical teaching of public security, combined with the relevant requirements of the "Opinions of China on Strengthening the Work of Public Security in the New Era", as the power source of promoting practical education of public security, it is necessary to continuously deepen the teaching reform of higher education, further standardize and deploy the construction of public security professional practice bases in colleges and universities, and improve the mechanism of "school bureau cooperation and collaborative education". We will improve the training quality of public security professionals. Conscientiously implement the reform requirements of the recruitment and training system of public security professionals, actively promote the construction of teaching practice bases, and constantly innovate the integration of "teaching, learning, practice and combat" talent training mode, so as to significantly improve the level of collaborative education and the quality of talent training. At the same time, it can also be seen that some teaching practice bases have different construction standards, unreasonable regional distribution, and the matching degree between professional teaching and practice posts is not high, which restricts the effectiveness of teaching practice bases to a certain extent. Therefore, it is necessary to continue to strengthen the cooperation between school and bureau for coordinated development, so that public security education becomes a strong supporter of the public security department. The public security department has become the strong backing of public security education.

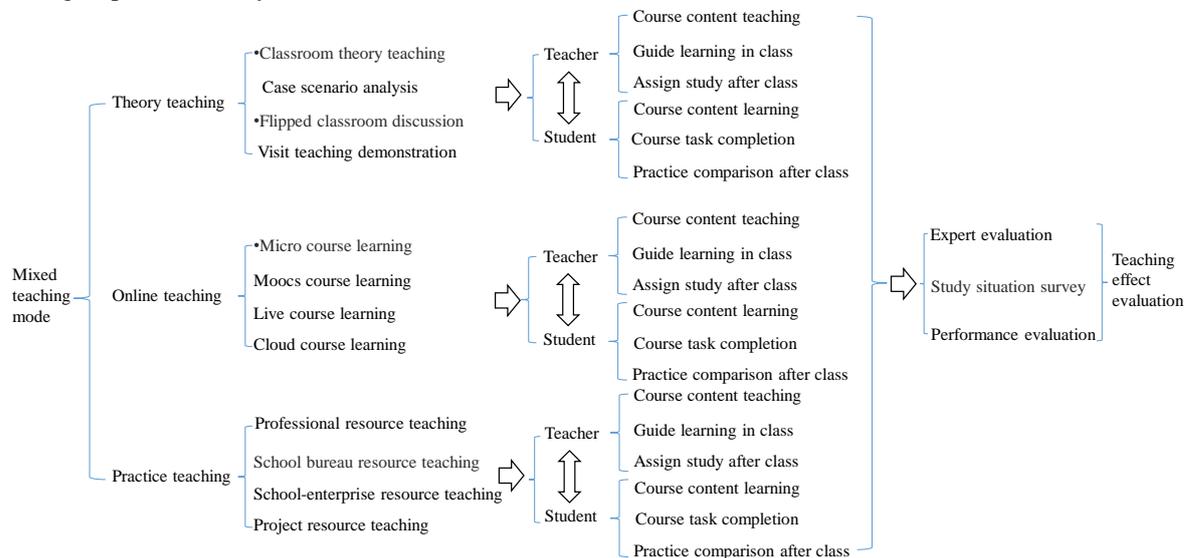


Figure. 3-Implementation process of blended teaching

IV. SCHOOL BUREAU COOPERATION PERSONNEL TRAINING MODEL

A. Necessity of cooperation

School bureau cooperation is the inevitable demand of practical teaching and professional practice of public security. From the perspective of public security vocational education, it is necessary to strengthen the practical teaching reform and highlight the school bureau cooperation mode. This mode changes the traditional thinking of traditional colleges and universities only relying on their own strength, and is different from the cooperation mode of school enterprise cooperation, which integrates the resources owned by the public security organs into the teaching work of the school[27,28]. Through the sharing of practice and training places and equipment, teacher

training, joint design of talent training programs and curriculum system and other ways to strengthen the level of school, in this school mode, no matter how the needs of public security organs, tasks and other changes, the school professional construction can be close to the actual needs, cultivate outstanding talents suitable for public security work.

B. Cultivation Status

School bureau cooperation is a summary of the advantages of school-enterprise cooperation, combined with the characteristics of the public security profession gradually developed, is a mutual support and common development of cooperation. However, there are still many problems in the cooperation between the school and the bureau. The public security organs and the school often lack effective docking and are relatively passive, which is mainly due to the fact that the public security organs have stronger actual work and larger business volume, resulting in the lack of ways and methods for effective docking. After summary, there are mainly the following problems: The Ministry of Public Security and the local public security bureau all encourage school bureau cooperation and jointly carry out relevant teaching and research, but most of them have not been implemented, and there is a lack of protection policies and planning. There are different construction standards in some teaching practice bases. How to realize curriculum design, training goal formulation, scientific research and development still needs further research. Two, the school bureau cooperation lack of effective integration, school bureau cooperation is not a simple internship, probation, should be internship students really into the police work. Internship can not only make up for the lack of theoretical knowledge learning on campus, but also make students realize the direction of their own learning. In the process, theory and practice should be integrated, highlighting the employment orientation. However, the current internship usually involves students doing simple transactional work, lacking pertinency, and the matching degree between professional teaching and practical posts is not high, so the internship effect cannot be well realized. It is necessary to further clarify and standardize the internship tasks. Third, the cooperation content of the school bureau needs to be further improved. The cooperation content completely depends on the willingness of both sides to cooperate. By comparison, it is found that there are some problems such as the low enthusiasm of the instructors, the lack of effective guidance for the construction of the actual teaching team, the insufficiently close combination of the public security informatization and the colleges and universities, and the resource sharing system needs to be further constructed.

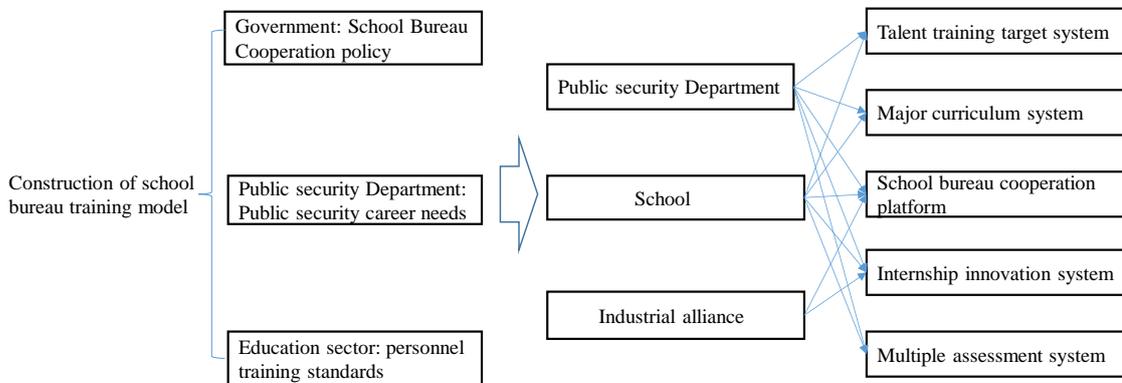


Figure. 4-Construction of school-bureau cooperation training mode

C. Promotion Path

Carrying out school-bureau cooperation of public security colleges and universities is not only the needs of the development of the school itself, but also the needs of the development of the country and society[29,30]. As the main body of colleges and universities, the government should elevate the school-bureau cooperation to a higher level, formulate practical policies, and promote the development of teaching. The basis for formulating school-bureau cooperation is public security organs, colleges and related enterprises. As shown in Figure 4, the following steps are required to realize the coordination: First, formulate the personnel training objectives, majors and curriculum teaching systems that meet the needs of the public security organs, so that the public security organs can participate in the personnel training system of the colleges and universities, and have distinct application characteristics of the public security industry on the premise of meeting the personnel training objectives of higher education. Second, the school bureau cooperation practical teaching platform construction, the public security organs information resources into the college, the construction of shared resources system, the regular introduction of experts to carry out lectures, the introduction of actual instructors to participate in the daily teaching of the

school, the establishment of practice base in the public security organs. Based on the problems encountered in the practical work of public security organs, the students' internship and graduation thesis design are guided by the school teachers and professional and technical police officers to discuss the topic selection and solution, and combine the technical needs of public security organs and enterprises to jointly carry out the platform construction in the form of new technology development, achievement transformation, and project cooperation. Third, ensure the quality of cooperation, build an evaluation system, and improve the main position of schools in the quality evaluation system in the process of traditional school bureau cooperation. Construct multiple evaluation subjects and multiple evaluation contents, form a multiple system of professional skills and professional quality valued by public security organs from theoretical knowledge to public security organs, attach importance to process assessment, and establish a quality evaluation guarantee system with a clear division of labor between schools and public security organs.

V. RESEARCH CONCLUSIONS AND PROSPECTS

A. Conclusions

China People's Police University develops the major of police equipment management informatization based on the actual combat of police work. According to the development strategy of public security education, the characteristics and connotation of the new engineering construction, the development goal and education and teaching concept of the new major are established. Adhere to the construction of intelligent police equipment management information system platform application-oriented, build the actual needs of police equipment management work as the pull, build the "teaching, learning, training, combat" integration training mode, integrate computer, information technology, artificial intelligence and other related courses into the curriculum system, and strengthen the police basic business ability according to the needs of police work, so as to form and improve the equipment management information professional curriculum system. In the process of training, the cooperation between the school bureau should be strengthened, the integration of new knowledge and new methods of computing technology should be strengthened, and a relatively perfect cooperation training mode consisting of practice guidance, regular lectures, supervision and evaluation should be formulated.

B. Shortcomings

The cooperative training mode of the school bureau requires a lot of time and energy from the school and the public security organs, and it is difficult to promote it on a large scale in a short time. The cooperative training mode of school bureau needs to deal with the relationship between school education and police practice, to ensure that students master the necessary theoretical knowledge and practical skills. And the practical courses related to computer technology still need to be further developed and perfected.

C. Future development prospect

According to the characteristics of the cooperation between the university and the bureau, the integration and practice of computing technology should be strengthened, the application scope of computer information technology personnel training should be expanded, and more high-quality police personnel should be trained. Explore the new cooperation mode of school bureau, such as order training and modern apprenticeship, to improve the pertinency and effectiveness of talent training. And strengthen the quality control in the process of cooperation between the school bureau.

The multi-party cooperative talent training mode of strengthening the integration of computing technology has certain advantages in the police equipment management information major, but it also has shortcomings. In the future, it is necessary to further improve the quality of school-bureau cooperation and training talents, so as to cultivate more excellent police talents for police combat.

ACKNOWLEDGEMENTS

Thanks to Hebei Province Teaching Reform Project (2021GJJG469) for its support.

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