

# A Case Study of Military Vocational Online Education during the Post COVID-19 Era

Weiye Zhang<sup>1</sup>, Qiwu Wu<sup>1,\*</sup>

<sup>1</sup> College of Equipment Management and Support, Engineering University of PAP, Xi'an, 710086, China

\*wuqiwu700@163.com

---

**Abstract:** Affected by the global COVID-19 pandemic, E-learning has developed rapidly and become the new normal of educational activities in China in the post COVID-19 era. E-learning is an indispensable force in military vocational education. In conjunction with the digital technology and traditional campus education deeply, it promotes the innovative development of military vocational education. However, there are still some drawbacks in online education of military vocational education, such as unstable network signal, shortage of education resources, lack of teaching skills, difficulty in the quality of education of evaluate and so on. This paper analyzes the present situation of online education of military vocational online education in the post COVID-19 era and offers some advices.

**Keywords:** Military vocational education, Online education, Quality of education.

---

## 1. Introduction

With the advancement of artificial intelligence (AI) and digital technology rapidly and the continuous advancement of educational informationization, with the orderly deployment of the trinity new military personnel training system of "military academy education, military training practice and military vocational education", the development of military vocational education is facing new opportunities and challenges, and online education is crucial to military vocational education [1]. Departments at all levels in China have initially built a full-time military vocational education platform for all employees, and launched more than 5,000 online education courses and micro-course teaching resources, which met the needs of online education of military vocational education (military online education) to a certain extent [2]. Though the global COVID-19 pandemic hindered the traditional campus classroom education, it promoted the popularization and application of online education in military vocational education, and made people re-think online education and have full confidence in it. Online education can be divided into Pure Online, Blended Education, Individual Online Courses and Massive Open Online Course [3], which have the advantages of the flexibility, the individuality, the fairness and the value. However, in the post COVID-19 pandemic era, online education of military vocational education still have some drawbacks, such as unstable network signal, shortage of education resources, lack of teaching skills, difficulty in the quality of education of evaluate and so on. To address those, this paper focuses on analyzing the problems with online education of military vocational education and its countermeasures with the background of post COVID-19 pandemic, then tends to put forward practical countermeasures and suggestions for the innovative development of online education of military vocational education.

## 2. Advantages

### 2.1. Flexibility

Flexibility is a crucial advantage of military vocational

online education. It breaks through the shackles of time and space. Anyone can access into education resources via the Internet anytime and anywhere, and the educated can continue to study for a degree while carrying out their career. At the same time, it produces the effect of "asynchronous education", that is, the educated do not need to follow the curriculum plan, but independently arrange the learning progress according to their own understanding and mastery of knowledge to improve the learning quality. While gradually realizing "pan-learning", we should narrow the "educational gap" caused by the environment in which the educated live. By the development of electronic technology and the support of low-cost network resources, people only need a mobile phone, laptop and computer to log in the online education platform, access into courses and carry out learning without spending a lot of money. At this time, regardless of geographical location and economic situation, online education resources can be shared equally at low cost, which can improve the innovation and varies form of education and it will make continuing education, lifelong education and skills education easier [4].

### 2.2. Personalization

Military online education promotes individualization of education. Dewey emphasized that in education, we should respect the student-centered subject position and guide the development of learning subject standard [5]. Confucius also pointed out in "The Analects of Confucius • Advanced Chapter" that students should be taught in accordance with their aptitude and according to their typ. Artificial intelligence(AI) technology promoted the progress of individualized education. Through big data technology, the school obtains data of students' different growth stages and study habits, and formulates targeted personal training programs according to these data to provide students with personalized learning education. Also, after completing the basic course education, students can customize their learning programs according to their job requirements and interests, and expand and improve their technical abilities. Many small and micro schools, such as Beijing Lunar Exploration College and Chengdu Pioneer School, have carried out personalized

education and achieved good results. Individualized education plays an important role in promoting the reform of traditional education [6].

### 2.3. Fairness

Military online education provides more learning opportunities and promotes education equity. The allocation of educational resources includes the distribution of various educational resources including manpower, capital and policies in different regions and fields, aiming at improving efficiency and promoting fairness with limited investment. However, in traditional coupon education, efficiency and fairness are difficult to balance [7]. In traditional coupon education, only when you go to school, you can learn. While high-level schools are mostly distributed in developed areas, and educational resources are scarce in remote areas, especially in deep poverty areas. Students can share high-quality resources via the military vocational online education platform based on Internet, which makes high-quality education no longer the exclusive service of students in developed areas. Students in remote areas also have the opportunity to access high-quality educational resources and the best professors, while it's same to disabled soldiers. Meanwhile, the number of students accommodated by military vocational online education platform is far greater than that of traditional classroom teaching, an excellent teacher can teach tens of thousands of students at the same time.

### 2.4. Valuable

Military online education helps students cultivate the values of lifelong learning. In order to maintain the combat effectiveness of the army in today's environment of rapidly increasing risks at home and abroad, it is necessary to establish the concept of lifelong learning [8]. Military vocational education is the crucial for training military talents, developing military science and serving to prepare for war. It is also an important part of the trinity new military personnel training system of "military academy education, military training practice and military vocational education". Online education of military vocational education occupies a prominent position, which is the foundation to ensure that everyone can learn, learn everywhere and learn from time to time. In the process of constantly adapting to the digital learning mode, students will further establish a multi-dimensional vision, master the methods of collecting, integrating and applying the resources, improve the ability of discovering, analyzing and solving problems, which is conducive to establishing and perfecting their own professional knowledge system, improving battlefield combat effectiveness, promoting military modernization and ensuring future combat effectiveness.

## 3. Disadvantages

In the post-epidemic era, the regular work on COVID-19 Pandemic has promoted the development of online military vocational education, However there are still many drawbacks in the implementation process.

### 3.1. Unstable network of online education

Military vocational online education cannot be separated from Internet terminals such as mobile network and computers. Although the penetration rate of electronic equipment in China is increasing, there are still shortcomings

in the online education environment. The mobile network infrastructure in some remote areas is still insufficient, and the network signal is poor, which makes it difficult to meet the live broadcast standard of online education. There are cases where the teaching pictures are stuck and delayed and important knowledge points are missed. Some schools have not established special network facilities for curriculum resources with high confidentiality. These reflect that the infrastructure construction of online education in China still needs to be strengthened. At the same time, during the live teaching, the private computers used by some teachers can't guarantee that the hardware equipment such as cameras and microphones can meet the teaching quality requirements, which inevitably leads to frame drop, delay, wheat frying and noise.

### 3.2. Shortage of education resources

The ability to develop education resources is insufficient, education resources are thin, and skills training curriculum resources are few. Some schools still use the traditional offline curriculum construction method to construct online education curriculum resources, which not only affects the communication effectiveness of online education curriculum, but also makes it difficult to inspire students to think better. Some courses are still replicas of classroom teaching, which are preaching, focusing on knowledge indoctrination, deleting the function of online education to entertain and entertain, and not closely following the requirements of actual combat teaching, resulting in uneven course quality and level and poor online teaching effect. Some curriculum content design is too simple and even hard to understand, and there is no in-depth analysis and explanation of educational knowledge and content, which leads to the superficial online education content, weakens moral education and aesthetic education, and is difficult to better achieve the effect of educating.

### 3.3. Lack of teaching skills

The popularization and application of military vocational online education not only tests teachers' teaching organization ability, but also requires students' comprehensive ability. Military vocational education has been carried out in the form of traditional campus classroom teaching for a long time. Influenced by the application level of Internet technology and software by teachers of different majors, it is inevitable that there will be a single teaching means and a lack of interaction in teaching contents, which will not give full play to the advantages of the Internet. Moreover, in traditional classroom teaching, teachers are the leaders of the classroom, interact directly with students face to face, adjust the classroom progress and mode according to students' reactions, and strengthen students' understanding of knowledge points through blackboard writing design. In online education, teachers can't grasp students' learning status in real time, and their interaction with students is also affected to some extent. For students, regional and individual differences, such as different network speed and quality, and differences in individual students' autonomous learning ability and self-discipline, all affect the quality of online education.

### 3.4. Difficulty in the quality of education of evaluate

Compared with traditional classroom education, the quality of online education is more difficult to evaluate. According to

the survey, nearly 40% of students think that online learning is not as effective as offline learning. Due to the limitation of space, teachers can't supervise all students effectively. In addition, some students lack motivation to learn, and they don't listen carefully. The division of space makes the interaction between teachers and students insufficient, students can't communicate with their peers in time and effectively, and lack the atmosphere of class collective learning, students' attention is easily distracted. When they miss important knowledge points, they need to spend more energy to make up for them, which eventually leads to the decline of learning interest and academic performance.

## **4. Suggestions**

As an important role of the trinity new military personnel training system of "military academy education, military training practice and military vocational education", the most prominent goal of military vocational online education is to train high-quality and high-level military personnel, which needs teachers to achieve through the teaching mode of knowledge transfer and applied skills teaching. Under the background of military vocational online education in the post-epidemic era, we should speed up the transformation of military vocational education concepts, actively explore a new mode of deep integration of traditional education and online education, innovate teaching management mode, give teachers more opportunities to explore the innovative development and exploration of military vocational education courses, improve teachers' autonomy in online education, face up to existing problems and take corresponding countermeasures.

### **4.1. Optimize the network and increase the investment**

The development of military vocational online education cannot be separated from the investment of educational resources, which should be continuously increased. The academies should build special funds for military vocational online education. In view of the problems of network system quality and hardware performance in some areas, local governments should strengthen the construction of online education infrastructure, and relevant teaching management departments of schools should speed up the upgrading and expansion of network hardware systems, optimize broadband systems, do a good job of communication and coordination with software development service providers and network service providers, allocate network resources according to school teaching plans, improve the flexibility of teaching plans, and stagger network peaks. Considering the differences between teachers' personal online teaching equipment and tools, teachers should also be equipped with corresponding online teaching hardware equipment to ensure the quality of online education and avoid the phenomena of fried wheat, screen and sound jamming.

### **4.2. Sharing cross-platform resource**

Efficient sharing and application of online educational resources is one of the connotations of online education, and it is also an important goal of building educational resources. Therefore, we should abandon the old idea of "rebuilding and using lightly" and inject a new idea of "building for use". The academies should actively strengthen communication with local universities, integrate excellent online courses between

the two sides by technical means, pay attention to the quality of curriculum resources construction, improve the level of military vocational online education, promote the modernization of our army, and promote the innovation and reform of teaching modes, methods and systems.

### **4.3. Pay attention to teacher training**

Teachers are the leaders of education and teaching, and high-level teachers are an important guarantee for the development of military vocational online education. Online teachers are not only the imparters of knowledge, but also the leaders of students' life path. In order to ensure the level of online education courses, we should focus on improving teachers' information application ability and online teaching level. First of all, starting with targeted on-the-job training, the training oriented to improving teaching practice ability is carried out by means of case analysis and special training so that they can quickly master the efficient application methods and hardware and software debugging ability of online teaching platform, and strengthen teachers' guiding ability for students. Secondly, formulate incentive mechanism for online education, improve teachers' initiative to participate in online education, and enhance innovative ability in online education. Finally, teachers should make full use of the advantages of new media technology and intelligent teaching software, use vivid and interesting teaching materials, and reasonably introduce teacher-student interaction mechanisms such as question and answer voting, first answer, random roll call, interactive games, password barrage, etc., so as to improve the quality of online courses and fully mobilize students' subjective initiative.

### **4.4. Develop the simulation training platforms**

The existing curriculum teaching resources of military vocational education platform are mostly theoretical explanation courses, resulting in unreachable spatial dimensions and less practical curriculum resources. However, military vocational education should face the battlefield and carry out actual combat teaching. Utilizing a simulation practice platform system suitable for military vocational education and related majors, which can improve students' awareness and ability of fighting is on the way. It is necessary to actively use AR/VR technology to create future online education scenes, carry out immersive online teaching [9], break down space barriers, and simulate the reproduction of distant scenes. For example, in a certain type of equipment course, students can learn the equipment immersive. The platform provides students with more digital educational resources about production scenes and operation tasks to make up for the lack of theoretical knowledge explanation. At the same time, we should actively expand cooperation with grass-roots units, local universities and enterprises, and form a teaching guidance mode for school teachers, military coaches, local professors and enterprise experts, so as to provide students with more digital educational resources about actual combat scenes and operational tasks.

### **4.5. Scientific quality evaluation system**

Standardized and effective teaching quality evaluation system is an important guarantee to enhance the quality of online education. In the post COVID-19 Pandemic era, with the help of digital technology and big data analysis, the management department should constantly explore and construct a comprehensive and guiding teaching quality

evaluation system in view of the problems existing in the practice of military vocational online education. The evaluation system should focus on the construction of military vocational online education platform and the audit of high-quality educational resources, and add diversified process evaluation and value-added evaluation. We should pay attention to the diversification of academic evaluation, and increase the main body of academic evaluation based on the complete record of teaching process in online education platform, including the evaluation of teachers and mutual evaluation among students. Constantly enrich the evaluation forms of online education, and use curriculum evaluation, visualization software and face micro-expression recognition technologies to describe students' knowledge ability, cognitive level and teaching feedback in the learning process in multiple dimensions [10].

## 5. Conclusion

To improve the quality and efficiency of national defense and military modernization, it is not only to rely on traditional classroom education, but also military vocational online education, which is a supplement to traditional classroom education and has the advantages of flexibility, individuation, fairness and value. Military vocational online education is an effective carrier and an important means to train outstanding military talents, and is of great significance to improve the working ability and level of military related employees.

## Acknowledgment

This work is supported by the Natural Science Basic Research Plan in Shanxi Province of China (No.2020JM-361), the Young and middle-aged scientific research backbone projects of Engineering University of PAP (No.KYGG201905) and the basic research foundation project of Engineering University of PAP (No.WJY202019, No.WJY202144, No.WJY202233), the PAP's Military Scientific Research Mandatory Project (No.WJ2020A020048, No.WJ2021A030100). the PAP's Military Theory Research Project (WJJY22JL0236), the PAP's national defense science and technology innovation project (No.ZZKY20223103).

## References

- [1] Ao Yonghong, Xiao Fengtao, Wang Yulong, etc. Research on the Construction of Information Technology Standard System of Military Vocational Education [J]. Industry and Information Education, 2019 (1): 1-6.
- [2] Wang Yulong, Xiao Yaqian, Ke Shuizhou, etc. Research on the Construction and Practice of Online Educational Skills Certification Course System in Military Vocational Education [J]. Industry and Information Education, 2022 (7): 91-94.
- [3] Xin Xiea, B, Keng Siaub,. COVID-19 pandemic-online education in the new normal and the next normal [J]. JOURNAL OF INFORMATION TECHNOLOGY CASE AND APPLICATION RESEARCH.2020. DOI: 10.1080/15228053. 2020.1824884
- [4] Ma Qiang, Zhao Yang and Lin Lin. Opportunities and challenges of online education in China under the impact of epidemic situation [J]. University Education. 2022 (5) 152-154.
- [5] Wu Jianzhong and Qin Qian. Innovative development path of online education industry in the era of artificial intelligence [J]. Media Forum. 2022 (4): 53-55.
- [6] Li Chunzi. Research on the Development Strategy of Online Education in Colleges and Universities in China [J]. University Education, 2019 (6): 38-40.
- [7] Wu Nanzhong. Connotation Analysis and Promotion Mechanism Research of "Internet + Education" [J]. Adult Education, 2016 (1): 6-11.
- [8] Bao Tianxiang. Research on the current situation and governance strategy of online education from the perspective of lifelong learning for all [J]. Continuing Education Research, 2022 (11): 82-86.
- [9] Li Yuanshuang, Wang Yunwu. Meta-universe empowerment online education: a new direction of immersive learning [J]. China Medical Education Technology, 2022 (36): 80-82.
- [10] Mao Yanbing, Li Xinyu, Zhao Lu. Research on Improving the Quality of Online Education in the Digital Transformation of Education [j]. China Audio-visual Education, 2022 (428): 38-42.