AI+ National Defense Education in Universities: Why? What to Do?

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Abstract: "AI+ national defense education in universities" is a conceptual and practical innovation that deeply integrates artificial intelligence (AI) technology into the national defense education system in universities, which is of great significance for achieving the comprehensive educational goals of national defense education in universities, and enhancing the university students' awareness of national security and their awareness of national defense. During the enhancement of national defense education in universities using AI technology, it is necessary to systematically promote the joint development of the national defense education teaching system, management platform, and faculty team with AI technology. Only in this way can the potential of AI technology to empower the national defense education in universities be fully leveraged.

Keywords: Artificial intelligence technology; Empowerment; National defense education in universities

1. Introduction

"A country without a strong defense force cannot gain a foothold in the world; good education can unite popular support." National defense education in universities is not only an important component of national security education, but also a foundational undertaking for enhancing the national defense awareness of all citizens and consolidating the national defense force. Since the 18th National Congress of the Communist Party of China, the Party Central Committee with Comrade Xi at its core has always placed the national defense education for all in a strategic position of national security and development, attached great importance to this endeavor, and made a series of top-level designs and important policy decisions.

From the strategic deployment of "We will raise public awareness of the importance of national defense" outlined in the Report to the 20th National Congress of the Communist Party of China to the clear requirement of "achieving the centenary goals of the People's Liberation Army on schedule and modernizing national defense and the armed forces" put forward in the Fourth Plenary Session of the 20th Central Committee of the Communist Party of China, these directives have pointed out the direction and provided fundamental guidance for universities to create a new situation in national defense education during the "15th Five-Year Plan" period. In the era of digital intelligence, with the continuous iteration of the new generation of information technology centered on AI technology, the transformation of digital intelligence has become an inevitable trend for achieving high-quality development in the field of higher education.

Therefore, an important issue that urgently needs to be explored in the field of national defense education in universities is how to leverage AI technology to break through the limitations of traditional national defense education, extend educational scenarios from reality to virtual, expand educational content from single-dimensional to multi-faceted, and improve educational effectiveness from passive acceptance to active recognition.

2. Why: Value implications of "AI+ national defense education in universities"

"AI+" refers to the deep integration of AI technology with various industries, aiming to drive industrial transformation and social development through the application of AI technology. "AI+ national defense education in universities", in essence, is the concept and practice of deeply integrating AI technology into the national defense education system of universities, which is in line with the rapid advancement of AI technology and aims to enhance the effectiveness of national defense education in universities. "AI+ national defense education in universities" is not only a technological innovation, but also a comprehensive upgrade of educational philosophy, model, and content, which is of great significance for achieving the comprehensive educational goals of national defense education in universities and enhancing the university students' awareness of national security and their national defense literacy.

2.1. Enriching educational carriers and forms, and promoting the joint development of national defense education and technological advancement

General Secretary Xi emphasized: "Our military is the people's military, and our national defense is the responsibility of every one of us. We must raise public awareness about the importance of national defense and strengthen unity between the government and the military and between the people and the military. Let us work together to create a mighty force for realizing the Chinese Dream and the dream of building a powerful military [1]."

University students are the backbone of future national defense construction. Universities should educate students on national defense knowledge, cultivate their awareness of national defense, strengthen their understanding of national sovereignty and security, guide them to pay attention to national defense technology, strategic security and other fields, and enhance their awareness of national defense. In the era of traditional media, the national defense education was mainly implemented through books, newspapers, television and other media. The dissemination form was one-way and fragmented, and the audience could only passively accept the content [2]. However, the integration of AI technology provides unlimited possibilities for the innovation of carriers and forms of national defense education in universities, making such education more engaging, dynamic, and vibrant.

A Guideline on Enhancing and Improving National Defense Education for All People, jointly issued by the Communist Party of China Central Committee, the State Council and the Central Military Commission, explicitly proposes vigorously advancing innovative development, exploring the application of new technologies such as the Internet, big data, cloud computing, AI, and blockchain, etc., and giving full play to the amplification, superposition and multiplication of digital technology on national defense education for all[3]. In the era of AI, multi-dimensional innovation can be achieved in carriers for the national defense education in universities through digital technology, mainly reflected in the transformation of curriculum system, teaching methods, and interactive experience.

In terms of the digitization of the curriculum system, standardized online demonstration course libraries and teaching case libraries can be built through cloud platforms, and three-dimensional teaching can be achieved through AR/VR technology to address issues such as insufficient teaching staff and variations in teaching materials; in terms of personalized education, big data can be used to analyze the student behavior data for building a precise evaluation system, achieving the transformation from "generalized education" to "targeted education"; in terms of the enhancement of the student experience, the robot dog operation, AI music creation, and other interactive projects can be carried out to integrate national defense knowledge into gamified scenarios, increasing student engagement; in terms of interdisciplinary

integration, various preset topics can be utilized to closely integrate fine traditional Chinese military culture with AI technology, expanding the boundaries of national defense education; in terms of educational forms, the AI-supported collaborative group learning, virtual debate competitions, and defense-themed virtual simulation projects can be adopted to break away from the traditional one-way indoctrination in the classroom, so that students can deepen their understanding and mastery of national defense knowledge through interactive communication and practical exploration.

2.2. Strengthening young students' awareness of national security, and cultivating their proficiency in national defense technology, and fostering a sense of responsibility and commitment

"Building a fortified national defense and a strong military commensurate with the country's international standing and its security and development interests is a strategic task for China's socialist modernization [4]." The steady advancement of national defense construction relies on the dedicated efforts of a large number of professionals, while the grand blueprint of building a powerful military requires the continuous contributions of generations of students. In today's era, hard power in science and technology has become the core driving force of national defense construction, and proficiency in national defense technology should be an essential competency for young university students in the new era.

Through the integration of AI technology into national defense education in universities, the educational effectiveness can be improved, and students can gain firsthand exposure to the technological sophistication and cutting-edge nature of AI, broaden their horizons, understand the characteristics and key development directions of national defense technology in the era of AI, and recognize their responsibility in promoting the progress of national defense technology, inspiring them to actively engage in the historical mission of developing national defense technology.

Another core goal of national defense education in universities is to cultivate young students' patriotism and sense of responsibility, and guide them to gain a correct understanding of the nation, ethnicity, and national defense, integrating personal development with the destiny of the country. In this regard, some universities have implemented excellent "AI+ national defense education" practices: Dalian University of Technology has delved deeply into its alumni, teachers and students' contributions to safeguarding national military, cultural, technological, ecological, and polar security, and constructed a virtual reality field utilizing digital, intelligent, and networked technologies. Through immersive and interactive designs such as technologically advanced cloud-based studios, online interaction with alumni guests, and simulated results models, the university interprets the connotation of the overall national security concept for students.

The Military Teaching and Research Office of Xi'an Jiaotong University has integrated AI into sand table simulation, and used AR technology to simulate battlefield environments and analyze tactical decisions in real time, enhancing students' understanding of World War II battles. These AI-powered immersive defense education scenarios help students recognize the importance of national security through practical experience, fostering their sense of mission and responsibility to contribute to the national defense cause, transforming national defense education from theoretical cognition to emotional identification, and ultimately elevating to conscious commitment to action among university students.

2.3. Achieving social consensus on national defense construction, and gathering the powerful positive energy for patriotism and building a powerful military

National defense construction not only requires the support of a strong military force, but also requires the awakening and enhancement of national defense awareness among all citizens. The essence of national defense education for all is education, that is, using educational means to serve national defense construction. Universities, as the leading force in the construction of the national education system, play a particularly important role in building consensus on national defense among all citizens. Integrating AI technology into the national defense education in universities can expand the reach of national defense education from campuses to broader societal spheres, building consensus and energizing efforts for national defense construction.

Universities can transform high-quality national defense education resources into more easily disseminated and

accepted digital content by leveraging the dissemination advantages of AI technology, and amplify the dissemination effects on online short video platforms through AI algorithms. The approach of "AI+ dissemination of national defense education resources" can broaden the reach of such resources for national defense education in universities, enabling them to play an educational role in a broader field, becoming a valuable supplement to national defense education for all, and contributing to the formation of a societal atmosphere where "everyone cares about and supports national defense".

In this regard, a relatively typical example is the practical exploration of the "Light of Intelligence" volunteer service team from the School of AI, Wuchang University of Technology. The team carried out national defense education courses in the "Love Daycare Class" in Guta Community, Huangmei County. The members edited the national defense knowledge and interactive moments in the course into an interesting 15-second short film, which was pushed to community parents and surrounding residents through algorithms, forming a dissemination chain of "children learning, parents watching, and community sharing". In addition, the team also encouraged parents, community workers and other groups to participate, fostering the continuous formation of social consensus on "collaborative promotion of national defense education among families, schools, and communities". Practice has proven that the application of AI facilitates the social dissemination and utilization of resources for national defense education in universities, enhancing the social value of national defense education resources.

3. What to do: Practical pathways of "AI+ national defense education"

As a typical representative of new quality productive forces, AI technology will definitely promote the effectiveness of national defense education in universities. However, the prerequisite for this promoting effect lies in that: When AI technology is used to empower national defense education in universities, it is necessary to systematically promote the coordinated development of national defense education related fields, achieving the joint development of national defense education content system, management platform, and faculty team with AI technology. Only in this way can the potential of AI technology to empower the national defense education in universities be truly leveraged.

3.1. Building an intelligent educational content system

Educational content is the core element of the national defense education system. The construction of the "AI+ content system for national defense education in universities" should be based on resources related to the Party's heritage, supported by localized characteristics, and guaranteed by dynamic optimization. It is necessary to consolidate the foundation of the education on the history of revolution. The organic integration of revolutionary resources into the content of national defense education in universities can enhance the supporting power, appeal, driving force, influence, and guiding role of the education. Veteran Red Army soldiers and veteran Eighth Route Army members among retired military officers, heroic veterans who participated in the War of Liberation and the War to Resist US Aggression and Aid Korea, as well as exemplary figures who emerged in successive battles to defend the motherland, are all invaluable assets for national defense education.

AI technology can be used to aggregate these revolutionary resources in the cloud, so that students can experience revolutionary war scenes (such as the Long March and the Capture of the Luding Bridge), modern information-based war scenes (such as air-sea battle and unmanned combat)[5], and heroic struggles of combat heroes fighting bravely for their noble beliefs without fear of bloodshed and sacrifice to enhance students' patriotism and foster their historical initiative and sense of responsibility for the great rejuvenation of the Chinese nation.

It is important to establish a localized national defense knowledge database. Different regions and types of universities have different resource endowments and educational characteristics. The national defense education content should be developed based on a thorough review of the knowledge framework of national defense history, national defense regulations, military theory, weapons and equipment, and combined with the actual situation of the universities, building a national defense education resource library tailored to local contexts.

On top of that, it is also vital to carry out dynamic updates and real-time optimization of educational content. Universities should make good use of big data to guide students to pay attention to changes in national security situation and the advancements of national defense technology. The AI algorithms can be used to intelligently screen and integrate educational content, and tailor content through tiered design and targeted delivery based on the cognitive characteristics of students in different majors and grades, enhancing the pertinence and appeal of national defense education in universities.

3.2. Establishing an intelligent management platform

Establishing an intelligent management platform is a crucial means to enhance the efficiency and quality of national defense education in universities. Universities can collaborate with technology companies to integrate technologies such as big data, AI, and cloud computing, etc., and jointly develop intelligent management platforms featuring student management, teaching management, and resource management, thus achieving real-time collection of student data, intelligent monitoring of teaching processes, and efficient integration of high-quality educational resources.

In terms of student management, the platform can collect students' learning behavior data to establish personal learning profiles, and comprehensively grasp students' learning status. Moreover, the platform can also accurately identify students' problems and shortcomings in the learning process, and provide tailored learning suggestions and guidance plans for students by analyzing students' learning data through AI algorithms. In terms of teaching management, the platform can achieve real-time monitoring and management of teachers' teaching processes, helping teachers promptly adjust teaching strategies, and improving teaching quality.

Additionally, the platform also incorporates a teaching effectiveness evaluation function to conduct comprehensive evaluation of the implementation and educational outcomes of national defense education courses. With the help of big data analysis technology, the platform can statistically analyze the backend data to generate detailed evaluation reports, providing objective and accurate data support for further optimization and improvement of teaching work.

In terms of resource integration, the platform can sort out and identify the educational value of national defense cultural relics and historical materials from all over the country, establishing a digital museum for national defense education in universities with the help of technologies such as 3D modeling and AI-powered audio guide, etc. Students can access the digital museum anytime and anywhere via computers, mobile phones, and other devices, browse various exhibits independently, listen to professional audio guides and participate in interactive projects, realizing the digitization and accessibility of national defense education.

3.3. Strengthening the construction of AI teaching staff

General Secretary Xi emphasized that the key to running ideological and political theory courses better lies in teachers. Similarly, the key to enhancing the effectiveness of national defense education in universities also lies in teachers. In the era of AI, the key to establishing an intelligent national defense education system and laying a solid foundation for educational work is to build a team of versatile educators who master both national defense education and AI technology.

It is essential to continuously enhance teachers' ability to use AI technology. Teachers must possess the ability to adapt to and manage digital and intelligent environment, conduct educational data research and analysis, develop professional skills, and innovate in intelligent educational scenarios [6]. Universities can collaborate with AI colleges or key laboratories of fraternal institutions to provide teachers with specialized training, online learning resources, and technical exchange platforms.

It is crucial to encourage teachers to participate in educational research projects that integrate AI technology with national defense education, and provide opportunities and platforms for teachers to cooperate and exchange ideas with AI experts, enhancing their practical ability to carry out national defense education with AI technology. It is fundamental to establish an "AI+ national defense education" assessment and mechanism for teachers, with "whether AI technology can be efficiently integrated into the national defense education process, whether AI technology can be used to optimize the teaching content and national defense education methods" as the main evaluation indicators. Teachers who perform well in

this field should be promptly recognized and rewarded, while those who do not meet the standards should be provided with targeted training and guidance, providing a solid faculty support for empowering national defense education in universities with AI technology.

4. Conclusion

"AI+ national defense education in universities" is both an inevitable choice in line with the development of the era of digital intelligence, and a strategic initiative for universities to deepen the reform of national defense education and enhance the effectiveness of education. All universities should firmly seize the historical opportunities brought by the era of digital intelligence, adhere to a holistic approach to national security, continue to promote the deep integration of AI technology and national defense education, and establish an intelligent and efficient national defense education system for the new era, thus creating conditions for achieving the comprehensive educational goals of national defense education in universities, enhancing the university students' awareness of national security and fostering a new generation of young people to shoulder the mission of realizing national rejuvenation.

Disclosure statement

The authors declare no conflict of interest.

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