

## PRACTICE FORUM

# Luban Workshop: A new exchange and cooperation model of China's vocational education internationalization

Fenghui Wang\*

Luban Workshop Research and Promotion Center, Lifelong Education Research Institute, Tianjin Academy of Educational Sciences, Tianjin 300191, China

## Abstract

Luban Workshop is a new model for the internationalization of China's vocational education. It is an active exploration to serve the joint construction of the "Belt and Road Initiative" and international production capacity cooperation, providing a new platform for promoting Sino-foreign vocational education exchanges and cooperation as well as the integration of industry and education internationally. This article reviews the mature experiences of the internationalization of higher education in multiple developed countries and holds that the internationalization practice paths and advanced paradigms in developed countries, to a certain extent, provide an international perspective and theoretical reference for the construction of Luban Workshop. At the same time, it is believed that Luban Workshop is one of the international development models of vocational education with Chinese characteristics and has become a well-known brand in the domestic and international vocational education field. With the continuous advancement of establishment, the future construction quality of Luban Workshop is facing both opportunities and challenges. Drawing on the experience of developed countries in the internationalization of vocational education in terms of teaching models, standard output, quality control and school-enterprise cooperation, Luban Workshop still needs to continuously improve and perfect in management, operation, cooperation and development, and optimize and improve in combination with actual needs to achieve high-quality and sustainable development.

## Keywords

Luban Workshop, vocational education, international cooperation

## INTRODUCTION

The Luban Workshop is not only an outstanding practical case in the internationalization process of China's vocational education, but also a typical achievement in the field of cross-border higher education development worldwide.

The Organisation for Economic Co-operation and Development (OECD) points out that internationalization has significant impacts on enhancing the domestic and interna-

tional reputation of schools, strengthening their competitive edge, promoting academic exchanges and the flow of talent resources, and improving research capabilities (Feng & Liu, 2013). Cross-border higher education is an important component of its internationalization (Knight, 2006), and collaborating with local educational institutions is a major approach for the advancement of cross-border education projects and institutions (Zhou, 2004). Since the General Agreement on Trade in Services came into effect in the 1990s, cross-border higher education has developed rapidly

### \*Corresponding Author:

Fenghui Wang, Luban Workshop Research and Promotion Center, Lifelong Education Research Institute, Tianjin Academy of Educational Sciences, No.25 Fukang Road, Nankai District, Tianjin 300191, China. Email: lisawff@126.com.

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(Fang & Cao, 2021). The construction and development of the Luban Workshop not only possess the common features and commonalities shared by global cross-border education, but also reflect the profound transformation of China's vocational education internationalization over the years, from "learning and drawing on" to "pioneering and innovating", and from "one-way input" to "two-way mutual learning". It provides a practical model for the development of global vocational education that combines Chinese characteristics with a global perspective.

## THE EXPERIENCE OF INTERNATIONAL DEVELOPMENT OF VOCATIONAL EDUCATION IN ADVANCED NATIONS

### *Overseas implementation of Germany's Dual Vocational Training System*

Germany's Dual Vocational Training System has been acclaimed as a secret weapon behind the nation's economic boom and steady growth since the 1960s. Its core philosophy, "real economy + vocational education", constitutes a fundamental element of Germany's national competitive advantage. Germany has placed significant emphasis on monitoring the development of vocational education in neighboring countries. In accordance with the European Qualifications Framework (EQF), Germany formulated its own eight-level German Qualifications Framework. These measures have facilitated better integration of the Dual Vocational Training System into the broader European vocational education landscape and established a clearer frame of reference for its future development (Jiang, 2013).

Germany's Dual Vocational Training System accentuates a pedagogical philosophy that closely integrates theory with practice and an educational principle centered on school-enterprise cooperative training. In its international expansion, this system focuses on establishing close partnerships with local companies in EU-member states, as well as understanding their specific needs and market dynamics. This approach allows the system's adaptation to local practical requirements, facilitating the design of curricula that are better aligned with regional needs. Such integration helps students gain an in-depth understanding of corporate operational mechanisms during their studies, thereby enhancing their practical skills and professional competence. Due to its international recognition, Germany's vocational education institutions award overseas students the same vocational skill certificates as those granted to domestic graduates. Concurrently, Germany attaches great importance to establishing cooperative relationships with the local governments of partner countries as securing

government support is conducive to the smooth implementation of vocational education programs.

### *Overseas implementation of Japan's vocational education*

The Japanese vocational education system highlights inheriting the spirit of craftsmanship and cultivating practical skills. During the overseas operations, Japanese vocational education institutions establish cooperative partnerships with local educational institutions and actively shares its philosophies and successful cases regarding professional ethics, an innovative spirit, and practical capabilities. This measure facilitates a better understanding of the characteristics of Japanese vocational education in other countries. Japanese vocational education underscores the integration of industry, academia, and research, actively promoting collaboration among schools, enterprises, and research institutions. It prioritizes curriculum development and teacher training to enhance the practicality and effectiveness of vocational education. Furthermore, Japan implements a vocational competency assessment system to evaluate students' professional skills and practical work experience, as well as utilizes international certification to boost their global competitiveness (Li, 2023).

Germany and Japan both highly value emphasis on enhancing collaboration with local governments and enterprises in their overseas vocational education endeavors. They prioritize disseminating their respective national philosophies and proven experiences in vocational education, which plays a vital role in promoting and expanding their presence abroad. Moreover, both countries attach great importance to curriculum development and teacher training, offering relevant support to partner countries to effectively guarantee the quality of their overseas operations. Last, they both emphasize vocational skill certification and practical, hands-on teaching, ensuring that the outcomes of these programs are in line with the actual local needs.

Compared with other developed countries, China's higher education internationalization started relatively late. It went through a complex process of learning, borrowing, and subsequently, high-quality output. After many years of development, it has made significant progress. Currently, openness and cooperation have become key to promoting education reform and innovation in the new era, as well as an inherent requirement for building a high-quality education system. Especially in recent years, internationalization of vocational education in China has achieved considerable development. With the rapid growth of the Chinese economy, the demand for high-quality technical talents is also rising. As an essential means to cultivate

technical talents, vocational and technical education has been paid increasing attention. The Chinese government has declared a series of policies and measures to encourage the development of vocational and technical education in the country. Building first-class colleges, upgrading teachers' professional skills, strengthening collaboration between enterprises and colleges, and fostering international exchanges and cooperation in vocational education all provide strong impetus. It has become an inevitable trend for internationalization of vocational education in China to cultivate local talents and thus improve its competitiveness in the international market.

## ORIGIN AND ESSENCE OF LUBAN WORKSHOP

The Belt and Road Initiative (B&R) aims to enhance extensive multilevel exchanges and collaboration among countries involved in the construction of the B&R, as well as unleash the development potentials and comparative advantages of different nations. The B&R always adhered to the Silk Road spirit of "peace and cooperation, openness and inclusiveness, mutual learning and mutual benefit" (The State Council of the People's Republic of China, 2024). People-to-people connectivity is an important part and cultural foundation of the B&R (Zhou *et al.*, 2018). Carry out extensive cooperation in education, culture, science and other fields to lay a solid public opinion foundation for deepening bilateral cooperation. Therefore, vocational education, as an important component of education, has become an important carrier for promoting cultural and people-to-people exchanges among the countries involved in the B&R. Luban Workshop, which mainly conducts vocational and technical degree education and vocational training through cooperation between China and foreign countries, has become a new model for China's vocational and technical education to exchange and cooperate with foreign countries.

Luban Workshop was pioneered by vocational institutions in Tianjin as a new model for the international development of vocational education. Tianjin, a municipality directly under the Central Government of China, is also a megacity and a city with advantages in the development of vocational education in China. In 2015, the Chinese Ministry of Education and the Tianjin municipal government jointly established the National Demonstration Zone for Modern Vocational Education Reform and Innovation, explicitly proposing to boost the internationalization of vocational education, create new windows for international cooperation, and explore new pathways for the global expansion of Chinese vocational education. This has prompted various vocational colleges in Tianjin to actively embark on the exploration of the internationalization of vocational

education. Thanks to Tianjin's long-term commitment to the concept of "coordinated development of industries, sectors, enterprises, occupations and specialties", it has formed a unique advantage in the development of vocational education. It has accumulated rich experience and fruitful achievements in aspects such as the school-running model, management mechanism and teaching and education of vocational education. It has already established a mature cooperation platform in the field of international exchanges and cooperation in vocational education. With the basic conditions for overseas cooperative education in place, Luban Workshop came into being.

What is the reason behind naming Luban Workshop after Lu Ban? Lu Ban, a renowned architectural engineer, was a craftsman during the Spring and Autumn and Warring States periods in ancient China. He invented woodworking tools, agricultural machinery, civil engineering and other daily necessities, which greatly enhanced the social production efficiency of that time and facilitated people's lives. Lu Ban can be acclaimed as a bearer of the wisdom of ancient Chinese laborers, as well as a symbol of the spirit of Chinese craftspeople. Such representation stands as a tangible manifestation of the continual transmission, advancement, and evolution of China's esteemed traditional culture. Named after an iconic figure of skilled craftsmanship, Luban Workshop serves as an international platform for collaboration between China and other countries, highlighting their exchange and cooperation in vocational education and training, with vocational education programs being the primary focus.

### *Construction positioning of Luban Workshop*

Luban Workshop is an important teaching project jointly established by Chinese and foreign colleges, research institutions, enterprises, and social organizations to share China's excellent vocational education achievements overseas. The construction of Luban Workshop is based on the experience in the development of China's vocational education reform and innovation demonstration zone, aiming to impart the teaching concept and model of China's vocational education and training and carry out vocational and technical exchanges and cooperation.

Luban Workshop adopts international professional teaching norms that are in line with international advanced technical levels and international vocational qualification certificate standards. Chinese and foreign institutions join hands to cultivate high-quality local technical and skilled talents in the partner countries.

With the continuous advancement of the B&R, Luban Workshop has further strengthened its cooperation with and

services to countries along the B&R through Sino-foreign cooperative education, academic exchanges, teacher training, and education for international students. Doing so supports the sustainable development of international production capacity cooperation and builds a bridge for cultural exchanges and economic interaction among countries along the B&R.

### ***Construction principles of Luban Workshop***

Luban Workshop adheres to the mechanism of joint research, sharing, common use and win-win. In its construction, it follows the five principles of "equal cooperation, adapting to local conditions, prioritizing quality, emphasizing competence and skills, and integrating industry and education" (Lv *et al.*, 2017).

#### ***Principle of pursuing equal cooperation***

Based on the partner's recognition of China's outstanding achievements in vocational education, technical equipment, and professional teaching standards, cooperate on an equal footing with the other party to jointly discuss cooperation methods, project implementation, and major development.

#### ***Principle of adapting to local conditions***

According to the political, economic, and social environments and technical skill levels of different countries—and within a unified standard framework—fully consider the needs of the partner to establish Luban Workshop with distinctive national characteristics.

#### ***Principle of prioritizing quality***

Give priority to selecting the internationalized advantageous majors, high-quality courses, excellent teachers, high-quality resources and general technical skills of Chinese institutions to join the construction of the Luban Workshop, ensuring the educational quality and brand of the Luban Workshop.

#### ***Principle of emphasizing competence and skills***

To select the best technical equipment, utilize those used in Chinese vocational skill competitions to promote cooperation between Chinese and foreign institutions. This approach will enhance mutual learning of vocational education concepts and cultivate the talents specializing in technical and other skills, who are urgently needed for the socioeconomic development of partner countries.

#### ***Principle of integrating industry and education***

Fully leverage the advantages of Chinese vocational education and industry. Based on the close integration and interaction among industries, sectors, enterprises, occupations and specialties, we should leverage the joint efforts of the government, industries, enterprises, schools and research

institutions to promote high-quality international integration of industry and education.

### ***Construction pathways of Luban Workshop***

At present, there are three ways to build Luban Workshop: Inter-school cooperation construction, which is based on the cooperative education and exchange between China and foreign institutions to jointly build Luban Workshop. The construction of school-enterprise cooperation involves working hand in hand with overseas Chinese-funded enterprises or high-quality domestic enterprises to jointly build Luban Workshops with high-quality overseas institutions of higher learning. Based on the foundation of economic and cultural exchanges and cooperation between China and foreign countries, select suitable overseas institutions to jointly build Luban Workshops.

## **PROGRESS AND MANAGEMENT STRUCTURE OF LUBAN WORKSHOP CONSTRUCTION**

### ***Construction progress of Luban Workshop***

On March 8, 2016, Thailand's Luban Workshop was officially inaugurated, marking the launch of the first of its kind globally. This pioneering initiative was a collaborative effort among Tianjin Bohai Vocational Technical College, Tianjin Railway Technical and Vocational College, and Thailand Ayutthaya Technical College. The UK's Luban Workshop was unveiled in May 2017, representing China's first one in Europe, established through a partnership between Tianjin Economics and Trade School and Chichester College in the UK. In March 2019, Africa's first Luban Workshop was inaugurated in Djibouti. In December 2025, America's first Luban Workshop was inaugurated in Nicaragua.

With Luban Workshop's accelerated construction process, it has developed into a vital project for the internationalization of vocational education in China, continuously absorbing excellent educational resources. Up to now, Luban Workshop Construction Alliance had accredited a total of 38 projects spanning 32 countries (Table 1).

### ***Tianjin Luban Workshop Research and Promotion Center***

Tianjin Luban Workshop Research and Promotion Center is a professional research think tank for Luban Workshop. It undertakes functions such as intellectual property protection, quality assessment, teacher training, resource development, scientific research, and the release and promotion of research results for Luban Workshop. It provides decision-making services, quality supervision and support services for the construction and development of

**Table 1: The distribution continent, quantity and cooperative countries of Luban Workshop projects**

Continent	Quantity	Country
Asia	15	Thailand (2 projects), India, Indonesia (2 projects), Pakistan, Cambodia, Tajikistan, Kazakhstan (3 projects), Uzbekistan, Laos, Kyrgyzstan, Turkmenistan
Europe	5	UK, Portugal, Bulgaria, Serbia, Russia
Africa	17	Djibouti, Kenya (2 projects), South Africa, Mali, Nigeria, Egypt (2 projects), Côte d'Ivoire, Uganda, Madagascar, Ethiopia, Morocco, Rwanda, Gabon, Benin, Tanzania
America	1	Nicaragua

**Luban Workshop.**

The center operates under the "1 + 5 + N" mechanism: The number "1" refers to Tianjin Academy of Educational Sciences, which serves as the main body responsible for organizing and implementing Luban Workshop research and promotion efforts, thus providing overall leadership. The number "5" denotes five supporting structures. Tianjin Vocational Institute, Tianjin Bohai Vocational Technology College, and Tianjin Railway Technical and Vocational College operate as subcenters, each undertaking responsibilities for promotion, exchange and cooperation, and resource development. These subcenters are complemented by Tianjin Engineering Practice Innovation Project (EPIP) Research and Promotion Center at Tianjin University of Technology and Education and Luban Workshop Experience Hall at Tianjin Light Industry Vocational Technical College. "N" represents the extensive collaboration between the center and various Luban Workshop construction units, research institutions, and other stakeholders in Tianjin.

The Institute of Lifelong Education at Tianjin Academy of Educational Sciences functions as the center's office, responsible for the daily affairs of Luban Workshop projects (Figure 1). In essence, the center is in charge of ensuring the comprehensive and full-process quality assurance of such projects.

**Luban Workshop Construction Alliance**

In order to continuously enhance the quality of Luban Workshop construction in terms of construction positioning, construction model, construction standards, and school-enterprise collaboration, and to promote exchanges and cooperation in vocational and technical education between China and foreign countries, in November 2020, a national organization, the Luban Workshop Construction Alliance was established in Tianjin, and released the "Luban Workshop Construction Regulations" and the "Working Measures of the Luban Workshop Construction Alliance". Be responsible for the identification, management and exit of Luban Workshop, and systematically standardize the



**Figure 1.** Organizational structure of Tianjin Luban Workshop Research and Promotion Center. EPIP, Engineering Practice Innovation Project.

construction and management of Luban Workshop. Now, the construction union membership and observer unit has grown to 355 (Luban Workshop Construction Alliance, 2020), covering professional colleges and universities, research institutions and industry enterprise. A development ecosystem for the Luban Workshop has been formed, featuring multi-party collaboration, resource integration, and shared construction and benefits.

**CONSTRUCTION FEATURES OF LUBAN WORKSHOP**

**Standardized construction implemented by Luban Workshop**

From its inception, Luban Workshop has emphasized standardization, making it a crucial component of establishing Luban Workshop as an international brand. Standardization is based on the outstanding achievements accumulated through Tianjin's role as a national demonstration zone for vocational education reform and innovation. It establishes a comprehensive and systematic management system rooted in the educational philosophy, models, and standards of vocational education "going global". This system regulates the entire process of each Luban Workshop project, from initiation and construction to operation and evaluation, ensuring the standardization and quality of Luban Workshop development.

The certification stipulates strict adherence to the Luban

Workshop Operation Project Certification Standards. Luban Workshop projects rigorously comply with the standards, which cover facility construction, training equipment, teacher training, professional standards, and teaching resources. Luban Workshop development is guided by advanced teaching models, based on international professional teaching standards aligned with cutting-edge technologies. It is supported by teaching equipment that meets the standards of the National Vocational College Skills Competition and enriched by multidimensional teaching resources that integrate traditional paper-based materials with information technology. The foundation lies in the standardized training of overseas faculty (Yang, 2019).

### ***Professional course settings aligned with international standards***

According to the 2024 statistics from the Research and Promotion Center, Luban Workshop projects worldwide have established 94 international programs across 14 major categories, including electronic information, advanced manufacturing, transportation, smart agriculture, commerce and trade logistics, and metallurgy. Among these, 26 international program teaching standards have received certification from partner countries and have been integrated into their national education systems (Tianjin Luban Workshop Research and Promotion Center, 2026). These programs are aligned with internationally leading technical standards in their respective industries, meet the socioeconomic development needs of partner countries, and have been reviewed and recognized by their educational authorities.

The international teaching standard for Chinese cuisine at the UK's Luban Workshop has been incorporated into England's National Qualifications Framework, becoming a national vocational training certification standard recognized as part of employment qualifications within the EU. In Pakistan, the Industrial Automation and Robotics course, developed based on electrical automation technology and mechatronics at Luban Workshop, has been certified by the Technical Education and Vocational Training Authority (TEVTA) of Punjab Province and integrated into the TEVT system. Students who pass the course receive vocational training certificates issued by the Punjab Board of Technical Education.

The program offerings of each Luban Workshop are designed based on the socioeconomic development needs of the partner country and the specialized resources of the participating Chinese institutions. Currently, Luban Workshop's talent cultivation levels span four tiers: Secondary vocational education, higher vocational education, applied undergraduate education, and postgraduate education.

### ***EPIP teaching model adopted by Luban Workshop***

The Luban Workshop adopts an engineering practice innovation project teaching model, which organically combines the four elements of engineering, practice, innovation and project. It is a teaching model for cultivating technical and skilled talents with actual engineering as the background, engineering practice as the orientation, ability cultivation as the goal and engineering projects as the leading force.

EPIP teaching has been established as the teaching model and core connotation of the Luban Workshop and has been applied in Luban Workshops in over 20 countries around the world. In March 2023, the Tianjin EPIP Research and Promotion Center was established, dedicated to conducting research, application, and promotion of vocational education teaching models, and exploring the construction of an international EPIP certification system (Tianjin University of Technology and Education, Office of Scientific Research, 2025).

### ***Equipped with high-quality teacher training and teaching resources***

Luban Workshop implements localized management, making an internationalized faculty team a key element and crucial guarantee for its construction. The basic conditions for building a Luban Workshop include teacher training and the development of bilingual teaching materials and various forms of teaching resources. Teacher training consists of two parts. First, foreign teachers undergo comprehensive professional training in China. Second, Chinese teachers provide corresponding professional training in partner countries.

Luban Workshops are generally equipped with bilingual teaching materials and cloud-based classroom systems. The teaching materials are co-developed by Chinese teachers and their counterparts in partner countries, tailored to local linguistic contexts and pedagogical needs, thereby providing abundant curriculum resources for Luban Workshop programs. The cloud-based classrooms incorporate interactive whiteboard systems and video conferencing platforms, enabling real-time connectivity between Chinese and international educators. These systems support live streaming of lectures, audio communication, courseware sharing, and digital whiteboard annotations, facilitating synchronized teaching across borders.

As of 2024, Luban Workshops worldwide have enrolled over 17,000 students in overseas degree programs and have trained more than 95,000 individuals. Over 3300 teachers from abroad have been trained, with the total training duration exceeding 248,000 hours. Chinese institutes have

provided ample teaching resources, including over 9500 sets of training equipment and 4400 internship workstations. These resources support a wide range of educational and training activities, as well as facilitate basic professional experiments, practical training sessions, and collaborative technology the B&R projects undertaken by schools and enterprises, addressing diverse needs in vocational education and industry-academia cooperation (Tianjin Luban Workshop Research and Promotion Center, 2026).

### ***Serving international integration of industry and education***

Since 2008, Tianjin has held the China's Vocational College Skills Competition annually. The process of setting up competition events continuously integrates advanced technologies, promoting the transformation of competition resources and achievements into professional construction, course teaching and school-enterprise cooperation, laying a resource foundation for in-depth sharing and mutual learning between China's vocational education and the world. During the construction and operation of the Luban Workshop project, the building institutions have collaborated with domestic and foreign enterprises to develop high-quality competition events. Meanwhile, the construction institutions have also developed engineering, practical, innovative and project-based teaching resources based on the standards of the competition events (Lv *et al.*, 2023).

Luban Workshop's core philosophy in promoting the international integration of industry and education is "Industry and Education Advance Together". This endeavor aims to foster resource sharing and complementary advantages among B&R partner countries, cultivating highly skilled technical talents to meet local needs. By deeply integrating educational and industrial resources, it achieves an organic fusion of education and industry, aligning vocational training with the demands of the global labor market. This approach not only serves the economic and social development of partner countries but also drives technological innovation and industrial upgrading of both Chinese-invested enterprises and local businesses.

On April 29, 2021, the National Luban Workshop Industry-Education Integration Development Alliance was established, with 32 cooperative enterprises and 18 vocational colleges participating in the construction of Luban Workshop becoming the first batch of members of the alliance. The Alliance brings together the high-quality forces of enterprises, Luban Workshop construction units, and research institutes. It is an important manifestation of the collaborative play of resource advantages between industry and education to jointly promote the development

of vocational education, and also a strong support for Luban Workshop to serve international production capacity cooperation.

In 2022, the contest rules of the first World Vocational College Skills Competition, China further developed contest categories based on the practical needs of domestic and international industry enterprises, establishing a high-quality platform to promote international industry-education integration and skills exchange among teachers and students from vocational colleges worldwide.

## **THE GLOBAL PROMOTION AND PROTECTION OF LUBAN WORKSHOP BRAND**

### ***Luban Workshop Exhibition at the First World Vocational and Technical Education Development Conference***

In August 2022, the First World Vocational and Technical Education Development Conference hosted by China was held in Tianjin. The event brought together over 700 participants, including representatives from 123 countries, as well as ministers of education, ambassadors to China, and heads of international organizations from more than 50 nations. During the conference, a parallel forum on Belt and Road Cooperation and Luban Workshop Development was convened, bringing together guests from embassies in China, international organizations, research institutions, and enterprises to explore new approaches and models for Luban Workshop initiatives and international vocational education cooperation.

The conference was held simultaneously with the World Vocational Education Industry-Education Integration Expo. The Luban Workshop Exhibition—a highlight of the main event—showcased the brand's core values, development journey, achievements, global impact, and prospects, demonstrating China's fruitful outcomes in internationalizing vocational education.

### ***Luban Workshop Exhibition at the Second World Vocational and Technical Education Development Conference***

In November 2024, Tianjin hosted the Second World Vocational and Technical Education Development Conference, where the Luban Workshop Exhibition emerged as a central highlight. With its theme, Connecting the World with Skills, Empowering the Future, the exhibition featured Luban Workshop's impressive accomplishments since its founding in 2016. The exhibition showcased the achievements of Luban Workshops established in multiple countries around the world and succeeded in highlighting the

workshop's role in contributing to talent development, supporting enterprises, and enhancing bilateral and regional cooperation in pursuing high-quality development.

Divided into multiple sections, the exhibition, using various formats such as physical objects, images and videos, showcases the significant achievements and international influence of the Luban Workshop, China's global brand in vocational education, highlighting the workshop's role in contributing to talent development, supporting enterprises, and enhancing bilateral and regional cooperation in support of the high-quality development of the B&R. For example, the Central Asia section highlights the progress and achievements of the Luban Workshop in Tajikistan, Kazakhstan, Uzbekistan, Kyrgyzstan, and Turkmenistan. The Intelligent Transportation section focuses on projects related to automotive repair and urban rail transit. The exhibition also features interactive activities and promotional videos that vividly showcase the Luban Workshop's accomplishments, underscoring the warmth of people-to-people and cultural exchanges between China and other nations, as well as the shared vision of lasting friendship and mutual understanding.

### ***Luban Workshop at the Shanghai Cooperation Organization (SCO) Summit***

The 25th Meeting of the Council of Heads of State of the SCO was held in Tianjin in September 2025. As the birthplace of the Luban Workshop initiative, Tianjin has established 10 such workshops in eight SCO-member countries—Russia, Kazakhstan, Tajikistan, Uzbekistan, India, Pakistan, Cambodia, and Egypt. These workshops offer 21 specialized programs across six major fields, providing formal education to over 15,000 students and skills training to more than 3000 individuals. These programs have instructed many technical and skilled professionals in areas such as manufacturing, new energy, artificial intelligence, and digital economy for these countries (China News Service, 2025). Through Luban Workshop projects, Chinese institutions are supporting industrial development and promoting effective employment in SCO-member states. Relying on this initiative, an increasing number of young people from SCO-member countries are pursuing studies in China, systematically acquiring professional skills through integrated training models that link secondary and higher vocational education, as well as specialized and undergraduate programs. The SCO Summit in Tianjin has provided a new platform for Chinese vocational education to expand its global presence, engage in mutual learning with vocational education systems worldwide, and share exemplary outcomes and exchange experiences.

### ***Intellectual property protection for the Luban Workshop brand***

Luban Workshop has become an international brand of China's vocational education, so the protection of brand value has become an important part of ensuring quality. The Research and Promotion Center has been continuously promoting the trademark management and intellectual property protection of the Luban Workshop. It has successively obtained the trademark rights of the Luban Workshop in the UK, China and Thailand. In the future, the intellectual property protection of Luban Workshop should cover all projects.

## **OPPORTUNITIES AND CHALLENGES IN THE CONTINUING DEVELOPMENT OF LUBAN WORKSHOP**

As globalization grows increasingly complex, the world is witnessing new trends in technological development, presenting both emerging opportunities and challenges for the advancement of Luban Workshop.

### ***Continuously emerging technological applications***

Driven by the ongoing transformation of information technology, new technologies are continuously emerging. Applications of technologies such as artificial intelligence, big data, blockchain, and IoT are reshaping our lifestyles and work patterns. The advent of these technologies has not only enhanced production efficiency but also unlocked greater possibilities for innovation and development. Luban Workshop is committed to sharing China's outstanding achievements in vocational education with the world and collaborating with partner countries to cultivate the technical and skilled talents urgently needed for local economic and social development. In the face of technological advancements and evolving global economic and social demands, Luban Workshop must promptly adjust its program offerings, teaching methods, faculty training, and operational management to adapt to new global trends and strengthen its adaptability for sustained growth.

### ***More robust quality assurance measures needed for continuous expansion of scale***

As the number of Luban Workshop increases and their scale expands, the number of countries involved continues to grow. Given the varying levels of development, regional cultures, and customs among partner countries, the construction of Luban Workshops must adapt to the actual needs of local development, which imposes higher quality requirements on their establishment. The better the adaptability of Luban Workshops, the more assured their construction quality will be. On the other hand, Luban

Workshops are being built in an increasing number of countries, and the overall requirements for their construction quality will also rise. Chinese institutions should enhance their actual investment in the teaching quality, management level, teacher training, and the use and maintenance of resources and equipment of Luban Workshop. This is quite challenging for Chinese institutions. It is necessary to establish a sound management system and working mechanism to provide effective guarantees for the quality of the Luban Workshop construction.

### ***Important role of industry-education integration and school-enterprise cooperation not yet fully realized***

The integration of education and industry is one of the fundamental principles in the construction of the Luban Workshop. Therefore, the collaboration between the workshop project and enterprises is an important way to achieve the integration of education and industry. Industry-education integration serves as one of the core principles in establishing Luban Workshops, while school-enterprise cooperation represents the primary pathway. Through such partnerships, Luban Workshops ensure that their educational programs remain closely aligned with local industrial needs, thereby securing sustainable development.

However, at present, the form of cooperation between Luban Workshop and enterprises is still relatively simple. The cooperative relationship mainly serves as a bridge between Luban Workshop and enterprises based on the convenient conditions of regional industry education and the overseas cooperative relationship of Chinese institutions. Although enterprises and the Luban Workshop have a certain degree of cooperation in talent cultivation, course development, internships and practical training, and teacher exchange, in terms of the depth of cooperation, the leading role of enterprises is not yet prominent, and the role of Luban Workshop in promoting the integration of industry and education has not been fully exerted. More complete mechanisms are still needed regarding the contact channels, forms of cooperation, protection of the rights and interests of both the school and the enterprise, process feedback, and the entry and exit mechanisms for enterprises in the Luban Workshop school-enterprise cooperation.

### **CONCLUSION**

As a renowned brand in the internationalization of China's vocational education, Luban Workshop has become a vital platform for promoting Sino-foreign cooperation and exchange in vocational education. The establishment of Luban Workshop projects across the world has empowered China and its partner countries to share educational

resources, exchange pedagogical concepts, and explore innovative teaching methodologies. With the continuous development, it is believed that influence and value of Luban Workshop in the field of global vocational education will further increase.

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Not applicable.

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Not applicable.

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The author has no conflicts of interest to declare.

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None.

#### ***Data availability statement***

All data have been included in this paper.

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