

# **The Academy of Engineering and Technology of the Developing World (AETDEW)**

## **Proposal for AETDEW in Assisting China in Promotion of High Quality Vocational and Technical Education in Belt and Road Countries**

### **1.0 China's Policy Guideline on Promoting the High Quality Development of Vocational Education**

In a policy document entitled "Guideline on Promoting the High-Quality Development of Modern Vocational Education"(the Guideline) (Annex No. 1) on Oct 12 2021, the general offices of the Communist Party of China Central Committee and the State Council spelled out a set of policy measures aimed at beefing up support for vocational schools and improving the quality of skill-focused education.

The Guideline sets out objectives including establishing a modern vocational education system nationwide by 2025. By 2035, China's vocational education system is expected to be ranked the most competitive globally. An important plank of the Guideline is to accredit the educational qualifications of technical and vocational universities and colleges and their graduates namely technologists and technicians to give them proper societal recognition.

Of particular significance in relation to China's Global Development Initiative, the Guideline sets out to improve the level of China-foreign cooperative education by running a number of exemplary China-foreign cooperative education institutions and projects to realize China-foreign human resource capacity cooperation. The Guideline directs Chinese technical universities and vocational colleges to follow Chinese enterprises to go abroad through the construction of Luban Workshops in Belt and Road countries.

It is apparent that the Guideline is China's affirmation that in the global digital era of the 21<sup>st</sup> Century, employment opportunities for the youth of China are in the creation of

The Luban Workshop Construction Alliance (the Alliance) has been established under the China Education Association for International Exchange (CEAIE) of the Chinese Ministry of Education to systematically design, construct and manage all Luban Workshops. To date, Luban Workshops have been set up in over 20 countries, including Thailand, Portugal, Egypt, Mali, Djibouti, Cote d'Ivoire, Nigeria, Uganda, Ethiopia, the United Kingdom, Pakistan, India, Cambodia, Kenya, Indonesia, Madagascar, Benin and South Africa. All have been set up by vocational and technical universities and colleges in Tianjin with the support of the Tianjin Municipal Government and some Tianjin enterprises.

## **2.0 Vocational Education Industry-Education Integration Empowerment Improvement Action Implementation Plan (2023-2025), China National Development and Reform Commission**

In order to implement “the Guideline on Promoting the High-Quality Development of Modern Vocational Education”, China National Development and Reform Commission (NDRC) issued “the Vocational Education Industry-Education Integration Empowerment Improvement Action Implementation Plan (2023-2025)” (Annex No.2) on 13 June 2023. This is directed at all relevant ministries, government departments and financial and banking institutions at national, provincial and municipal levels.

This Directive is aimed at expediting industry-education integration in the development of high quality vocational education. It contains specific implementation targets like building more than 10,000 enterprises and about 50 national pilot cities focused on the integration of industry and education. It provides tax breaks and financial incentives to enterprises and vocational universities and colleges to invest in vocational education and the development of innovative industries including advanced manufacturing, new energy, new materials, biotechnology, artificial intelligence, industrial Internet, energy storage, intelligent manufacturing, biomedicine and other strategic emerging industries, as well as life service industries such as elderly care, child care, and housekeeping. The implementation deadline is extremely tight i.e end 2025, barely 18 months from now.

As per all China’s implementation records in all sectors, all targets in the Directive will be accomplished when the whole of China is mobilised.

## **3.0 The Academy of Engineering and Technology of the Developing World (AETDEW)**

In 2005, the Group of G77 and China held the 2nd Summit in Doha and urged UNESCO to enhance engineering and technological human and institutional capacity in developing countries. As a result, the UNESCO International Science, Technology and Innovation Centre for South-South Cooperation (ISTIC) was launched in May 2008 in Kuala Lumpur. ISTIC was hosted by the Malaysian Government under the Ministry of Science, Technology and Innovation (MOSTI) as her contribution to assist sustainable development of sister developing countries through science, technology and innovation.

As the achievement of the inclusive 17 UN Sustainable Development Goals (SDGs) would require greater collaborative efforts by South countries through South-South Cooperation, ISTIC in 2015 proposed the formation of the Academy of Engineering and Technology of the Developing World (AETDEW) to mobilize the engineering, technological and scientific communities in government, industry, academia and civil societal organisations of G77 nations to help them achieve the UN SDGs. AETDEW was registered in Malaysia and launched in Kuala Lumpur in May 2017. Currently AETDEW membership includes 5 Honorary Fellows, some 200 Fellows and Foreign Fellows. They are top executives and former

office bearers of international governmental organisations like UNESCO, the UN Office for South-South Cooperation (UNOSSC) and ISTIC; regional governmental organisations like ASEAN and ECO Science Foundation; international scientific and engineering organisations like the InterAcademy Partnership (IAP), the ASEAN Academy of Engineering and Technology (AAET); national governments, national academies, national institutions of engineers, national registration boards and councils of engineers and major national enterprises.

AETDEW primary focus has been to enhance the indigenous engineering and technological human and institutional capacities of south nations through the Belt and Road Initiative (BRI). AETDEW became the partner of Sugon Ruiyi Education of China to extend the Data@China Hundred Universities Project to hundred universities in Belt and Road countries to become Digital@Belt and Road Two Hundred Universities Cooperation Program. Some 35 technical universities and colleges in Belt and Road countries have joined the Two Hundred Universities Cooperation Program which was unfortunately stalled by the COVID-19 pandemic in the past four years. This is now being revived.

#### **4.0 AETDEW–Sugon Ruiyi Education Digital@Belt & Road Two Hundred Universities Cooperation Program**

The Digital@Belt & Road Two Hundred Universities Cooperation Program has its origin in the Data@China Hundred Universities Project (DCHUP).

In 2016, under the specific guidance of the “School Planning, Construction and Development Center” of the Ministry of Education of China, the Sugon Ruiyi Education Cooperation Center initiated and implemented the “Data@China Hundred Universities Project” , (DCHUP) which aims at selecting 100 colleges or universities throughout China and establishing therein the Sugon Big Data and Artificial Intelligence Application Innovation Centres, that integrate talent cultivation, scientific research support, industrial applications, and social services through establishing “Sugon Big Data and AI Academy” and building “Big Data and AI Application Collaborative Innovation Network” . DCHUP focuses on the combination of key Big Data and AI technologies and key national industry applications.

##### **Aims:**

- ● Propel the reform of the talent training model in colleges and universities.
- ● Promote colleges and universities to enter the technological innovation system.
- ● Enhance the capabilities of colleges and universities in assisting local industries strategy implementation in big data and internet plus.
- ● Encourage colleges and universities to seize every opportunity which might give a hand to the development of emerging industries.
- ● Encourage mass entrepreneurship and innovation in colleges and universities.

##### **To Realize:**

By connecting 100 “Sugon Ruiyi Big Data Colleges” and 100 “Big Data Application Innovation Centres” through the internet, DCHUP will realize:

- ● Sharing and exchange of hardware resources and industry application innovations,
- ● Bring the superiorities of computer resources, data resources and industry application into full play,
- ● Enhance technical innovation and application abilities,
- ● Build ultimately a “super platform for big data application” , to popularize big data thinking and technology in various industries, and promote the ecological development of big data industry in China.

To date, the number of colleges or universities which have been selected throughout China is over 70, and more than 30 Big Data and AI Academies have been established where teaching and research innovation work have already begun. In order to achieve the goal of 100 universities in China and the achievement of DCHUP objectives within 3 years, two project offices have been established in Shenzhen and Beijing with expert staff of about 50 in each office.

DCHUP is an excellent project of industry-education integration in vocational education development in China. It is well worthy of support of Chinese Government to extend it beyond hundred universities and colleges in China on urgent basis.

#### **4.1 The Digital@ B&R Double Hundred Universities Cooperation Program**

The “Data@China the Hundred Universities Project” , (DCHUP), and the Academy of Engineering and Technology of the Developing World (AETDEW) entered into a collaboration to promote the Digital@ B&R Double Hundred Universities Cooperation Project, by signing MOU on 28 July 2018.

Both parties are committed to jointly promote the following cooperation agenda:

1. Explore a mechanism for communication and exchange between 100 member universities of DCHUP in China and 100 universities and professional training institutions in other B&R countries, within the framework of the Belt & Road Initiative.
2. Select qualified universities in DCHUP to establish AETDEW training hubs in China to provide human resources development and training services that are in demand in B&R countries, with focus on the combination of key big data and AI technologies and key national industry applications; and to establish a global digital technology training network with training hubs in other B&R countries.
3. Both parties work together to rally policy or financial support from the Chinese government to promote the economic, cultural, and educational exchange activities of the B&R Initiative; and assist AETDEW through South-South Cooperation in helping developing countries achieve the UN SDGs by promoting

progress in engineering and scientific and technological innovation in developing countries.

The AETDEW-Sugon Ruiyi Education Digital@Belt & Road Two Hundred Universities Program is also an excellent program for China to help Belt and Road countries in development of industry-education integration in vocational education in line with China's Global Development Initiative.. It is also well worthy of immediate support of Chinese Government.

More information can be obtained from [aetdewobor.com](http://aetdewobor.com)

## **5.0 AETDEW and Its Role in Helping China to Extend Industry-Education Integration in Quality Vocational Education Development in Belt and Road Countries**

Due to AETDEW's established network of high level members in government, academia, industry and professional science engineering and technological organisations internationally and in Belt and Road countries and due to AETDEW's success in getting some 35 technical universities and colleges in Belt and Road countries to join the AETDEW/Sugon Ruiyi Education Digital@B&R Two Hundred Universities Cooperation Program, AETDEW is well positioned to help China to promote industry-education integration in vocational education in Belt and Road countries.

The stunning success of BRI in the past decade has laid the groundwork for the Global Development Initiative. After the stunning success of Belt and Road countries over the past decade, the groundwork for the Global Development Initiative has been laid. Chinese contractors have been building infrastructure assets at breakneck speed in Belt and Road countries. Most of the infrastructure assets are built within five years, but they need to be effectively operated and maintained by local engineers and technicians for a 20 to 50-year lifespan. The most urgent thing now is to train enough and skilled local engineers and technicians. This is one important plank of the AETDEW-Sugon Ruiyi Education MOU that relevant Chinese universities in DCHUP will mentor counterpart universities in Belt and Road countries in the operation and maintenance of infrastructure assets. The best vehicle is through the setting up of as many Luban Workshops in Belt and Road countries as possible. This is most urgent as there is only 7 years left before the UN SDGs deadline of 2030.

Societies in southern countries tend to treat people without college degrees as second-class citizens. In the current digital age, more and more systems and networks in our society are operated by computers and robots, whether it is high-speed rail networks, urban transportation systems, power grids or ports and terminals. In such a system, any system failure would be catastrophic. Such systems require constant monitoring and maintenance, primarily by skilled technicians. In fact, technical workers are in short supply throughout the world. They earn more than college graduates.

ISTIC has been promoting the accreditation of engineering qualifications in South countries, especially in Africa, ASEAN and Central Asia in cooperation with

UNESCO. Malaysia has also established the Malaysian Board of Technologists (MBOT) under the Ministry of Science, Technology and Innovation to enhance the social standing of technologists and technicians and of technical and vocational universities and colleges. Recognition of educational qualifications is only the first step in promoting the mobility of engineers, technicians, and technologists in Belt and Road countries. In this regard, ASEAN governments have signed an agreement on mutual recognition of engineering qualifications, enabling an engineer from any ASEAN country to work in all ASEAN countries as long as he or she is a registered ASEAN-Engineer. The ASEAN-Engineers Register is administered by the Institution of Engineers Malaysia (IEM). AETDEW will be happy to share our experiences in the context of the setting up of Luban Workshops in Belt and Road countries.



Academician Dato Ir. (Dr) Lee Yee Cheong, Malaysia  
AETDEW President  
18 June 2023 Kuala Lumpur

## **ANNEX No. 1**

**Issued by the General Office of the Central Committee of the Communist Party of China and the General Office of the State Council**

**"Guideline on Promoting the High-Quality Development of Modern Vocational Education"**

Vocational education is an important part of the national education system and human resource development. It shoulders the important responsibility of cultivating diverse talents, inheriting technical skills, and promoting employment and entrepreneurship. In the new journey of building a socialist modern country in an all-round way, vocational education has broad prospects and great promise. In order to implement the spirit of the National Vocational Education Conference and promote the high-quality development of modern vocational education, the

following guideline is hereby offered.

### 1. **General requirements**

(1) **Guiding ideology.** Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, thoroughly implement the spirit of the 19th National Congress of the Party and the Second, Third, Fourth, and Fifth Plenary Sessions of the 19th Central Committee, adhere to the leadership of the party, adhere to the correct direction of running schools, and adhere to morality in educating people, optimize the type positioning, deeply promote the reform of education methods, school-running models, management systems, and security mechanisms, effectively enhance the adaptability of vocational education, accelerate the construction of a modern vocational education system, build a skill-based society, promote the spirit of craftsmanship, and cultivate more high-quality technical and skilled personnel, skilled craftsmen, and craftsmen of a great country to provide strong personnel and technical support for the comprehensive construction of a socialist modern country.

(2) **Work requirements.** Adhere to the cultivation of morality in educating people and the joint cultivation of morality and skills, and promote the integration and unity of ideological and political education and technical skills training; adhere to the integration of production and education, school and enterprise cooperation, and promote the formation of a development pattern of benign interaction between production and education, and the complementary advantages of schools and enterprises; adhere to market-oriented direction, promote employment, promote the connection between school layout, professional setting, and talent training and market demand; insist on being practice-oriented and strengthening capabilities, so that more young people can realize the value of life by virtue of their skills; insist on facing everyone and teaching students in accordance with their aptitude, and creating a good environment where everyone can become a talent and everyone can show their talents.

### (3) **Main objectives**

By 2025, the characteristics of vocational education types will become more distinctive, the modern vocational education system will be basically established, and the construction of a skill-based society will be fully advanced. The school-running pattern is more optimized, the school-running conditions have been greatly improved, the enrollment scale of vocational undergraduate education is not less than 10% of the enrollment scale of higher vocational education, and the attractiveness and training quality of vocational education have been significantly improved.

By 2035, the overall level of vocational education will be at the forefront of the world, and a skilled society will be basically established. The social status of technical and skilled personnel has been greatly improved, the supply of vocational education is highly matched with the needs of economic and social development, and the role in building a modern socialist country in an all-round way has been significantly enhanced.

## **2. Strengthen the characteristics of vocational education types**

(4) **Consolidate the positioning of vocational education types.** Adapt measures to local conditions and promote the coordinated development of vocational education and general education. Accelerate the establishment of the "vocational education college entrance examination" system, improve the "cultural quality + vocational skills" examination and enrollment methods, strengthen provincial coordination, and ensure fairness and justice. Strengthen theoretical research on vocational education, and promptly summarize the laws and institutional models of vocational education with Chinese characteristics.

(5) **Promote the vertical integration of vocational education at different levels.** Vigorously improve the quality of secondary vocational education, optimize the layout and structure, implement the project of meeting the requirements for running secondary vocational schools, adopt measures such as mergers, cooperation, trusteeship, and group school running, build a number of excellent secondary vocational schools and high-quality majors, and pay attention to the delivery of higher vocational education students with a solid foundation of technical skills and a qualified cultural foundation. Support qualified secondary vocational schools to pilot community colleges according to the needs of local economic and social development. Promote the improvement of quality and training of higher vocational education, implement the "Double High Program", and concentrate on building a number of high-level higher vocational schools and majors. Steadily develop vocational undergraduate education, build vocational undergraduate schools and majors with high standards, keep the direction of vocational education, the training mode, and the characteristic development unchanged. Integrate the design of the vocational education talent training system, promote the connection of professional settings, training objectives, curriculum systems, and training programs at all levels of vocational education, and support the implementation of long-term training in professional fields with long training cycles and high skill requirements. Encourage application-oriented undergraduate schools to carry out vocational undergraduate education. In accordance with the principle of roughly corresponding majors, guide application-oriented undergraduate schools and vocational undergraduate schools to attract more graduates from middle and higher vocational schools to apply for the exam.

(6) **Promote the horizontal integration of different types of education.** Strengthen the penetration and integration of general education and vocational education at all stages of schooling, implement vocational enlightenment education in ordinary primary and secondary schools, and cultivate hobbies and career planning awareness of mastering skills. Explore and develop characteristic comprehensive high schools that focus on the cultivation of special skills. Promote the mutual selection of courses and mutual recognition of credits between secondary vocational schools and ordinary high schools, higher vocational schools and application-oriented universities. Encourage vocational schools to carry out subsidized training and market-oriented social training. Formulate a national qualifications framework, build a national credit bank for

vocational education, realize the certification, accumulation and conversion of various learning outcomes, and accelerate the construction of an education system that serves lifelong learning for all.

### **3. Improve the school-running system of integration of production and education**

(7) **Optimizing the supply structure of vocational education.** Focusing on major national strategies, closely aligning with trends in industrial upgrading and technological change, giving priority to the development of a number of emerging majors needed by industries such as advanced manufacturing, new energy, new materials, modern agriculture, modern information technology, biotechnology, and artificial intelligence, and accelerating the construction of preschool, nursing, health care, housekeeping and other majors that are in short supply, transform and upgrade a number of traditional majors such as iron and steel metallurgy, chemical medicine, construction engineering, and textile manufacturing, and withdraw and eliminate majors with oversupply, low employment rate, and disappearing jobs. Encourage schools to open more majors that are in short supply and meet market demand, and form a professional system closely connected with the industrial chain and innovation chain. Optimize the allocation of regional resources, promote the joint construction of vocational education innovation and development high grounds by the ministries and provinces, and continue to deepen the cooperation between the East and the West in vocational education. Initiate the implementation of local pilots for the construction of a skill-based social vocational education system. Support the running of vocational education for rural areas, strengthen school-local cooperation, combine education and training, accelerate the training of talents for rural revitalization, and encourage more farmers and returning migrant workers to receive vocational education. Support industries and enterprises to carry out technical skilled personnel training, and implement a lifelong vocational skills training system and an on-the-job continuing education system.

(8) **Improve the pattern of running multiple schools.** Build a multi-school-running pattern that is coordinated by the government, actively organized by industry companies, and deeply participated by social forces. Improve the systems of state-owned assets assessment, property rights transfer, distribution of rights and interests, and cadre and personnel management. Encourage listed companies and leading enterprises in the industry to organise vocational education, and encourage all kinds of enterprises to participate in organising vocational education in accordance with the law. Encourage vocational schools to cooperate with social capital to jointly build vocational education infrastructure, training bases, and jointly build and share public training bases.

(9) **Collaborate to promote the deep integration of production and education.** Governments at all levels should coordinate the scale, structure and level of vocational education and human resource development, and include the integration of production and education in economic and social development planning. With cities as the nodes, industries as the fulcrum, and enterprises as

the focus, build a number of pilot cities for the integration of production and education, create a number of benchmark industries that lead the integration of production and education, and cultivate a number of industry-leading enterprises that integrate production and education. Actively cultivate a market-oriented, supply-demand matching, precise service, and standardized operation service organization that integrates production and education. Compile and release reports on dynamic adjustment of industrial structure, industry employment status and demand forecast reports by classification and classification.

#### **4. Innovate the mechanism of school-enterprise cooperation in running schools**

(10) **Enrich the educational forms of vocational schools.** Vocational schools should actively carry out bilateral and multilateral technical cooperation with high-quality enterprises, jointly build technical skills innovation platforms, specialized technology transfer institutions and university science parks, technology business incubators, and maker spaces, and serve local small, medium and micro enterprises for technological upgrading and product research and development. Promote vocational schools to set up practice training bases in enterprises, and enterprises to build training and training bases in vocational schools. Promote the establishment of co-managed industrial colleges and enterprise colleges by schools and enterprises, and extend the space for vocational schools to run their schools.

(11) **Expand the form and content of school-enterprise cooperation.** Vocational schools should take the initiative to absorb leading enterprises in the industry to deeply participate in vocational education professional planning, curriculum setting, teaching material development, teaching design, and teaching implementation, and cooperate to build new majors, develop new courses, and carry out training specified by enterprise. Encourage industry-leading enterprises to lead the establishment of national and industry-based vocational education enterprise groups, and promote substantive operations. Explore the apprenticeship system with Chinese characteristics, and vigorously cultivate technical and skilled personnel. Support enterprises to accept students for practical training, and guide enterprises to set up apprenticeship positions according to a certain proportion of the total number of positions. It is strictly forbidden to charge students for practical training fees in violation of regulations.

(12) **Optimizing the policy environment for school-enterprise cooperation.** All localities should promote enterprises to participate in school-enterprise cooperation and cultivate technical and skilled talents as an important part of the formulation of industrial development plans, industrial incentive policies, and rural revitalization plans, and give "finance + land + credit" combined incentives to enterprises integrating production and education , Implement relevant tax and fee policies as required. The industry and information technology departments should take the situation of enterprises participating in school-enterprise cooperation as an important reference for the selection of various demonstration enterprises. Education, human resources and social security departments should take the effectiveness of school-enterprise cooperation as an important content

in evaluating the quality of vocational schools. State-owned assets supervision and management institutions should support enterprises to participate in and organize vocational education. Encourage financial institutions to provide relevant credit and financing support for school-enterprise cooperation in accordance with laws and regulations. Actively explore ways for vocational school interns to participate in work-related injury insurance. Accelerate the development of vocational school student internship training liability insurance and personal accident insurance, and encourage insurance companies to specifically determine premium rates for modern apprenticeship and new enterprise apprenticeship insurance. The income earned by vocational schools through school-enterprise cooperation, technical services, social training, and self-run enterprises can be used as a source of performance wages in a certain proportion.

## **5. Deepen education and teaching reform**

(13) **Strengthen the building of double-qualified teachers.** Strengthen the building of teachers' ethics and morals, and comprehensively improve the quality of teachers. Improve the vocational education teacher qualification certification system, and strengthen professional teaching and practice requirements in the national teacher qualification examination. Formulate the standards for dual-qualified teachers, and improve the standards for teacher recruitment, professional and technical job evaluation and performance appraisal. According to the vocational school student-teacher ratio and structural requirements, professional teachers are equipped. Strengthen the construction of vocational and technical normal schools. Support high-level schools and large and medium-sized enterprises to jointly build dual-qualified teacher training bases, implement the regulations that teachers regularly go to enterprises to practice, support enterprise technical backbones to teach in schools, promote the combination of fixed posts and mobile posts, and the mutual employment of part-time jobs between schools and enterprises. Reform of teaching staff building. Continue to implement the quality improvement plan for teachers in vocational colleges.

(14) **Innovative teaching models and methods.** Improve the quality and effectiveness of ideological and political theory courses, and promote Xi Jinping's new era of socialism with Chinese characteristics into textbooks, classrooms, and minds. Hold a teaching ability competition for teachers of ideological and political education courses in vocational schools. Widely carry out project teaching, situational teaching, and modular teaching, promote the deep integration of modern information technology and education and teaching, and improve the quality of classroom teaching. Fully implement flexible learning and credit system management, and support students to actively participate in social practice, innovation and entrepreneurship, and competitions. Successfully run the National Vocational College Skills Competition.

(15) Improve teaching content and teaching materials. Improve the comprehensive education mechanism of "job class competition certificate", design and develop courses according to actual production and job needs, develop a

modular and systematic training course system, and improve students' practical ability. In-depth implementation of the vocational skill level certificate system, improvement of certification management methods, and strengthening of interim and post-event supervision. Update the teaching standards in a timely manner, and incorporate new technologies, new processes, new norms, and typical production cases into the teaching content in a timely manner. Integrate the advanced standards embodied in vocational skill level certificates into the talent training program. Strengthen the national authority for teaching material construction, hierarchical planning, and improve the compilation, review, selection, use, update, and evaluation supervision mechanism of vocational education teaching materials. Guide localities, industries, and schools to develop textbooks with local characteristics, industry-appropriate textbooks, and school-based professional textbooks in accordance with regulations.

(16) Improve the quality assurance system. Establish and improve national vocational education standards for teachers, courses, teaching materials, teaching, practical training, informatization, safety, etc., encourage localities to introduce higher local standards based on actual conditions, and support industry organizations and leading enterprises to participate in the formulation of standards. Promote the construction of a system for diagnosis and improvement of teaching work in vocational schools. Improve vocational education supervision and evaluation methods, strengthen the supervision of local governments in fulfilling their vocational education responsibilities, and do a good job in the evaluation of the ability of secondary vocational schools to run schools and the ability of higher vocational schools to adapt to social needs. Improve the national, provincial, and school quality annual report systems, regularly organize quality annual report review and spot checks, improve the level of preparation, and increase disclosure. Strengthen the use of evaluation results, and use them as an important reference for approving school settings, approving enrollment plans, and arranging major projects.

## 6. Create a brand of vocational education with Chinese characteristics

(17) Improve the level of China-foreign cooperative education. Run a number of exemplary China-foreign cooperative education institutions and projects. Strengthen cooperation with international high-level vocational education institutions and organizations to carry out academic research, standard development, and personnel exchanges. Set up the vocational education category in the "Study in China" project and the Chinese government scholarship project.

(18) Expand the platform for China-foreign cooperation and exchanges. Implement the WorldSkills 2025 strategy in an all-round way, and strengthen cooperation with international and regional organizations such as UNESCO. Encourage open universities to build overseas learning centers, promote the construction of vocational education foreign-related industry organizations, and implement overseas training programs for vocational school teachers' teaching innovation teams, high-skilled leading talents, and talents in short supply in the

industry. Actively host the International Vocational Education Conference, hold the China-ASEAN Educational Exchange Week well, and form a number of brands for educational exchanges, skills exchanges, and cultural exchanges.

(19) Promote vocational education to go abroad. Explore the international development model of "Chinese + vocational skills". Serve international production capacity cooperation, and promote vocational colleges to follow Chinese companies to go out. Improve the construction standards of "Luban Workshop" and expand the connotation of running a school. Increase the proportion of vocational education in projects such as study abroad funds. Actively create a number of high-level international vocational schools, and launch a number of internationally influential professional standards, curriculum standards, and teaching resources. All localities should include vocational education in foreign cooperation planning as an important part of the construction of sister cities (provinces and states).

## 7. Organization and implementation

(20) Strengthen organizational leadership. Party committees and governments at all levels should put the promotion of the high-quality development of modern vocational education in a more prominent position, and better support and help the development of vocational education. The joint meeting of vocational education departments should give full play to its role, and the education administrative department should conscientiously implement the responsibilities of overall planning, comprehensive coordination, and macro-management of vocational education work. The state incorporates vocational education work into the supervision and evaluation of provincial governments' performance of educational responsibilities, and each province incorporates vocational education work into local economic and social development assessments. Select and match the main person in charge of the vocational school, and build a high-quality professional education cadre team. Implement the autonomy of vocational schools in terms of internal organization, job setting, employment plan, teacher recruitment, professional title evaluation and employment, etc. Strengthen the party building work of vocational schools, implement the ideological work responsibility system, carry out the demonstration and creation of party organizations and quality excellence in vocational schools in the new era, and implement the party's leadership in the whole process of running schools and cultivating people.

(21) Strengthen institutional guarantees. Accelerate the revision of the Vocational Education Law, and local governments formulate and revise relevant local regulations based on actual conditions. Improve the system of government investment as the mainstay and multi-channel fundraising for vocational education. Optimizing the expenditure structure, the new education funds are tilted towards vocational education. It is strictly forbidden to use tuition fees and social service income to offset the per-student appropriation, and explore the establishment of a differentiated per-student appropriation system for vocational education based on major categories.

(22) Optimizing the development environment. Strengthen positive publicity, excavate and publicize the typical deeds of grass-roots and front-line technical and skilled talents who have grown into talents, and carry forward the fashion of the era of glorious labor, precious skills, and creation of greatness. Open channels for vocational school graduates to obtain employment, settle down, participate in recruitment, professional title review, promotion, etc., and enjoy the same treatment as ordinary school graduates. Units and individuals who have made achievements in vocational education and technical and skilled personnel who have made outstanding contributions in the field of vocational education shall be commended and rewarded in accordance with relevant state regulations. All localities will include qualified high-level technical and skilled personnel into the high-level talent plan,

## **ANNEX No. 2**

### **Vocational Education Industry-Education Integration Empowerment Improvement Action Implementation Plan (2023-2025)**

All provinces, autonomous regions, municipalities directly under the Central Government and cities under separate state planning, Xinjiang Production and Construction Corps Development and Reform Commission, Education Department (Education Commission, Education Bureau), industry and information department, finance department (bureau), human resources and social security department (bureau), natural Department of Natural Resources (Bureau), State-owned Assets Supervision and Administration Commission of the People's Bank of China, Shanghai Headquarters of the People's Bank of China, all branches, business management departments, central sub-branches in provincial capitals (capitals), and central sub-branches in sub-provincial cities:

In order to implement the spirit of the 20th National Congress of the Communist Party of China and the relevant decisions and deployments of the Party Central

Committee and the State Council, in accordance with the relevant requirements of the "Guideline on Deepening the Reform of Modern Vocational Education System Construction" and "National Vocational Education Reform Implementation Plan", we insist on promoting production through education and promoting production assisting education; continuously to extend the education chain and service the industry chain; to support the supply chain, create a talent chain, and enhance the value chain, accelerate the formation of a mutually beneficial quality interaction between industry and education, and a deep integration of industry and education that complements the advantages of schools and enterprises; and to sustain quality human resource supply framework. This plan is formulated to provide strong human resource support for the comprehensive construction of a modern socialist country.

## **1. Action Goals**

Make overall plans to promote the coordinated development of education and industry, innovate and build a carrier platform for the integration of industry and education, continue to promote pilot projects of integration of industry and education, improve the implementation of the combined incentive and empowerment policy system, and further lead the integration of industry and education to a deeper level. By 2025, the number the national industry-education integration pilot cities will reach about 50, and the breakthrough and leading role of the pilot cities will have been fully developed; to build and cultivate more than 10,000 industry-education-integrated enterprises across the country; to assure that the industry-education-integrated enterprise system and the combined incentive policy system are sound and perfect; and various funding channels have steadily increased investment in vocational education, and industry demand has been better integrated into the overall talent training. In this process, a development pattern in which education and industry are integrated and positively interacted is gradually formed.

## **2. Key tasks**

**(1) Promote the formation of the "head-goose" effect of the integration of industry and education.**

**1. Cultivate and select pilot cities for the integration of industry and education.** Summarize the experience and practice of the first batch of pilot cities for the integration of industry and education; start the selection of the second batch of about 30 pilot cities for the integration of industry and education, and promote the pilot cities of the integration of industry and education to introduce solid and effective reform measures and play a leading role in demonstration of best practice. Encourage local authorities to cultivate and select a batch of provincial-level pilot cities for the integration of production and education, and establish a system of pilot cities for the integration of production and education. National industry-education integration pilot cities are prioritized to be selected from

provincial-level industry-education integration pilot cities.

**2. Deeply promote the integration of industry and education in key industries.** In the new generation of information technology, integrated circuits, artificial intelligence, industrial Internet, energy storage, intelligent manufacturing, biomedicine, new materials and other strategic emerging industries, as well as life service industries such as elderly care, child care, and housekeeping, we will further promote integration of industry and education, integrating and cultivating skilled and technical personnel who serve and support the major needs of industry. Create a group of industry-education-integrated industries with distinctive regional characteristics in the pilot cities and their provinces, create a group of high-level industry-education-integrated industry associations and promotion associations, and promote industry organizations to better integrate into the industry-education integration reform.

**3. Cultivate and build enterprises integrating industry and education.** Strengthen the incubation and cultivation of industry-education-integrated enterprises, and improve the identification standards for industry-education-integrated enterprises. Start the selection of the second batch of national production-education-integrated enterprises, from central state enterprises, local state-owned enterprises, private enterprises with outstanding strength, national manufacturing innovation centers, manufacturing sector individual champion enterprises, and special and new "little giant" enterprises, select and build leading companies in industry-education integration reform related industries. Guide all localities to speed up the training of local enterprises integrating industry and education, and complete the overall task of more than 10,000 enterprises across the country on time. Improve the cultivation archives of industry-education-integrated enterprises, formulate identification standards that are in line with the actual conditions of the region, and build and cultivate enterprises that integrate industry-education in the region.

**(2) Consolidate the foundation for the development of vocational colleges.**

**4. Systematic evaluation of project implementation results.** Carry out a mid-term evaluation of the implementation of the "14th Five-Year" "Education Strengthens The Nation" project to promote engineering vocational education industry-education integration project, and adjust relevant reserve colleges and projects according to the evaluation results.

**5. Expansion of production-education integration reserve projects.** In the "14th Five-Year Plan" "Education Strengthens The Nation" project to promote the project reserve project database, add about 200 higher vocational colleges and application-oriented undergraduate colleges, and the vocational education industry-education integration projects that are included in the reserve project database and meet the requirements that will be given key support through the central budget investment.

**6. Improve the professional setting of vocational education.** Encourage and guide vocational colleges, give priority to the development of a number of

emerging majors needed by industries such as advanced manufacturing, new energy, new materials, biotechnology, and artificial intelligence, and accelerate the construction of a number of majors that are in short supply, such as nursing, health care, childcare, and housekeeping. Renovate and upgrade a number of traditional majors in the fields of metallurgy, medicine, building materials, and textiles, withdraw and eliminate majors with oversupply, low employment rates, and disappearing jobs. Encourage schools to open more majors that are in short supply and meet market demand. Establish a professional system that tightly connects the industrial chain and the innovation chain.

**(3) Build a practical training base for the integration of industry and education.**

**7. Increase the support of training bases.** Through the "14th Five-Year Plan" "Education Strengthens The Nation" project, the investment in the central budget will be arranged to support the construction of a number of industry-education integration training bases, and the level of industry-education integration training in vocational colleges will be improved. High-quality completion of the major task of "building 100 high-level, professional, and open industry-education integration training bases" proposed in the "Outline" of the "14th Five-Year Plan".

**8. Guide the construction direction of the training bases.** When arranging investment within the central budget, give priority to fields such as advanced manufacturing, new energy, new materials, biotechnology, artificial intelligence, and the construction of training bases in the fields of nursing, health care, childcare, and housekeeping; radiate and drive practical training, employee training, product pilot testing, process improvement, and technology research and development in related industries.

**9. Optimize the construction process of the training bases.** Support qualified places to establish a multi-sectoral joint approval "green channel", optimize the approval process for vocational college project construction, strengthen essential element guarantees, and promote the facilitation of vocational college project construction.

**(4) Deepen the school-enterprise cooperation in the integration of industry and education.**

**10. Enrich the school-management method of the integration of industry and education.** Support vocational colleges to cooperate with enterprises and scientific research institutes to carry out collaborative innovation, jointly build key laboratories, engineering research centers, technology innovation centers, entrepreneurship innovation centers, enterprise technology centers and other innovation platforms, and to serve local small, medium and micro enterprises for technological upgrading and product research and development. Promote vocational colleges to set up practice training bases in enterprises, and enterprises to build training bases in vocational colleges. Promote the establishment of co-management industrial colleges and enterprise colleges by schools and enterprises, and extend the scope for building vocational colleges.

**11. Expand the training content of industry-education integration.** Guide enterprises to deeply participate in professional planning, teaching material development, teaching design, curriculum setting, and practical training in vocational colleges, implement school-enterprise joint enrollment, carry out entrusted training, made-to-order training and apprenticeship training, and promote the integration of enterprise needs into all aspects of talent training. Support enterprises to accept students for practical training, and guide enterprises to set up apprenticeship positions according to a certain proportion of the total number of positions.

**12. Optimize the cooperation mode of integration of industry and education.** Support qualified industrial parks to cooperate with vocational colleges and ordinary colleges and universities to organize mixed-ownership branch schools or industrial colleges. Support and standardize the establishment of vocational education by social forces, and promote the reform of the shareholding system and mixed ownership of vocational colleges through various methods such as corporate capital investment and social capital investment. allow businesses to use factors such as capital, technology, and management to participate in running schools according to law and to enjoy corresponding rights.

**13. Create a new carrier platform for the integration of industry and education.** Create a city-based industry-education integration complex based on industrial parks, and build an industry-education integration community in key industries and fields. Give full play to the role of vocational education groups (alliances), municipal industry-education integration consortia, and industry-education integration communities to improve the quality of talent training and promote high-quality employment.

**(5) Improve incentive and support combination measures.**

**14. Formulate and issue supporting policy documents.** On the basis of comprehensively sorting out the existing policies and measures to support the integration of industry and education in vocational education, and aiming at the problems existing in the development of integration of industry and education, research innovative incentives and support measures, form guiding policy documents, and further improve the "finance + land + credit" combined incentives to support the introduction of local implementation policies in line with local realities.

**15. Increase financial policy support.** The National Development and Reform Commission has stepped up efforts to recommend medium- and long-term loan projects for the integration of vocational education, industry and education to financial institutions. Encourage banking institutions to support the development of industry-education integration projects and industry-education integration enterprises in accordance with the principle of "risk control and business sustainability". Guide insurance institutions to develop insurance products related to the integration of industry and education. Support qualified enterprises integrating industry and education to go public for financing. Support qualified enterprises to issue special bonds for social sector industries, focusing on the construction of training bases.

**16. Increase investment policy support.** Through the "14th Five-Year Plan" "Education Strengthen Nation" Project, arrange for investment in the central budget to support the construction of qualified industry-education integration training bases. The support amount for each of higher vocational colleges and application-oriented undergraduate colleges shall not exceed 80 million yuan. Secondary vocational colleges The amount of support for each institution shall not exceed 30 million yuan. Include qualified vocational education industry-education integration projects into the scope of local government special bond support.

**17. Increase fiscal and tax policy support.** If the investment in vocational education by an enterprise integrating industry and education meets the requirements, 30% of the investment amount can be used to offset the education surcharges and local education surcharges payable in the current year.

**18. Increase land policy support.** Enterprises invest in or cooperate with the government to build vocational colleges and higher education construction lands, which are regarded as land for education. If they comply with the "Catalogue of Allocated Land", land can be provided through allocation, and enterprises are encouraged to voluntarily obtain land through transfer or lease. Explore land supply through long-term lease, combination of lease and transfer, and flexible term transfer.

**19. Increase credit policy support.** Intensify the collection of credit information of enterprises integrating industry and education, carry out industry credit evaluation, reduce the frequency of inspections in routine inspections and special spot inspections for enterprises with good evaluation results, and reduce inspection frequency, listed financing, government financial support, industrial support policies will be given to outstanding commendations and handling of government affairs, etc will be given priority and convenience. Centralized publicity will be made through the "Credit China" website.

### **3. Safeguard measures**

**(1) Strengthen organizational leadership.** The National Development and Reform Commission, the Ministry of Education, and the Ministry of Human Resources and Social Security, together with relevant departments, to take the lead in promoting the industry education integration and empowerment of vocational education. Departments of development and reform, education, human resources and social security in all localities must improve the coordination mechanism, rearrange various tasks in place, implement them, and assign responsibilities to them.

**(2) Create a good atmosphere.** Held an on-site meeting for the exchange of experience in the industry and education integration of vocational education. Organize the selection, editing and publication of typical cases of the integration of industry and education in vocational education, and promote the experience and practices of relevant places, learning and enterprises. Discover and publicize the typical deeds of grassroots and front-line technical and skilled talents who

have grown into talents, and promote the glory of labor, precious skills, and create great fashion of the times.

**(3) Strengthen experience promotion.** The effective measures to promote the integration of industry and education in vocational education, especially the construction of enterprises integrating industry and education, must be promoted in a timely manner within the provincial and city scope. Reform measures with a significant demonstration effect shall be submitted to the National Development and Reform Commission, the Ministry of Education, the Ministry of Human Resources and Social Security and other departments in a timely manner. For those that have been proved to be effective and can be promoted to institutional practice, timely summary and refinement are made, and the revision and improvement of relevant policies and systems are promoted, and those that meet the conditions are replicated and promoted nationwide.