

The Practice and Exploration of Educational Cooperation and Exchange between Dalian Jiaotong University and Japanese Universities and Institutions

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ABSTRACT

Dalian Jiaotong University is known as "the cradle of railway transportation equipment manufacturing engineers in China". For a long time, relying on geographical advantages, the university adheres to the strategy of opening up education and actively promotes international exchanges and cooperation with Japanese universities and institutions. Through student exchanges, teacher training, holding international academic seminars, carrying out cooperation in scientific research among teachers and students internship and training exchange programs, cooperating with Japanese enterprises in vocational and technical training etc., the university constantly expands the channels of international education and strengthens the cultivation of international talents.

Keywords: *Geographical advantage, Internationalization, Talent cultivation, Practice, Exploration.*

1. INTRODUCTION

Dalian Jiaotong University is the only institution of higher learning in Northeast China that takes railway transportation as its characteristic. It is also a key university of first-class discipline construction in Liaoning Province. In order to enhance the internationalization of education, the university continues to strengthen the cooperation with foreign universities, research institutes and other institutions. So far, the university has established intercollegiate cooperative relations with more than 100 universities in 23 countries and regions, including Japan, Russia, France, Australia, Ukraine, the United States, the Netherlands, the United Kingdom, Germany, Sweden, South Korea, Singapore, Mongolia, Canada, Spain, Uzbekistan, Ireland, Denmark and Cyprus. It also has business exchanges and professional cooperation with scientific research institutes and professional institutions in some countries. Through mutual visits, the university has deepened its friendship with foreign friendly schools, promoted its internationalization process, and expanded its overseas popularity and influence.

At present, the university has three Sino-US and Sino-Australian undergraduate joint education programs, and has built the Sino-Japanese Friendship Dalian Talent Training Center. It is an enrollment institution for Chinese government scholarship students and an experimental base for innovative talents training under 121 Project of Sino-US Talent Training Plan. In 2019, Dalian Jiaotong University, approved by the Ministry of Education, established a Sino-foreign cooperative school-running institution – FESTU Transport Institute of Dalian Jiaotong University, which is the first Sino-foreign cooperative school-running institution featuring railway transportation in northeast China and Russia. It is of great significance for the school to further improve the quality of personnel training and employment competitiveness, and enhance the level of internationalization in school running. The university and the University of Melbourne, Australia jointly established the International Research Center for Transportation and Regional Development of the Belt and Road Initiative. With the purpose of "inheriting the spirit of the Silk Road, serving the Belt and Road, and contributing to economic development", the institute gathers the

consensus and strength of government, industry, education, research and application, and strives to build a high level research institution integrating academic research, decision-making consultation and personnel training. The university, together with the Sino-Foreign People-To-People Exchange Center of the Ministry of Education and China Railway Construction International Group Co., Ltd., co-established the "Belt and Road Transport Connectivity and People-to-people Exchange Research Institute" to provide policy consultation, intellectual support and resource services for the railway industry and enterprises to go globally, and promote people-to-people exchanges between China and foreign countries in the railway industry. It will help other railway enterprises in China to participate in the Belt and Road construction and the international development. The university and the Far East State Transport University jointly build "Railway Technology Research Institute in Alpine Region". Aiming at the technical needs of high-speed railway construction and management in cold regions, the two sides complement each other with their advantages, and jointly establish an international scientific research team to carry out scientific research, scientific and technological innovation, project application, achievement transformation, personnel training and faculty team construction, so as to provide technical support for engineering problems in the process of "Belt and Road" and "High-Speed Railway Going Globally" construction.

Recently, the Belt and Road Initiative is stepping into the stage of practical cooperation. Dalian Jiaotong University, as the "cradle of railway transportation equipment manufacturing engineers in China" and the only institution of higher learning in Northeast China featuring railway transportation, has always adhered to the strategy of opening up education to the outside world and actively promoted international exchanges and cooperation. The exchanges and cooperation with Japanese universities and research institutions have been strengthened and fruitful results have been achieved.

2. ACTIVELY EXPANDING COOPERATION AND EXCHANGES WITH JAPANESE UNIVERSITIES

Since 1996, the university has signed intercollegiate exchange and cooperation agreements with nearly 30 Japanese universities,

including Muroran Polytechnic University, Iwate Prefecture University, Waseda University, Ritsumeikan University and Tokyo Metropolitan University to carry out student exchange, teacher training, student internship and other programs, and jointly hold international seminars and other activities.

2.1 Student Exchange Programs

First, since the official signing of the exchange agreement between the two universities, the exchange and cooperation between the two universities have been carried out smoothly. Students and teachers have exchange visits frequently. In 2000 and 2004, the exchange and cooperation agreements between the two schools were successfully renewed. The cooperation and exchanges between the two universities have been growing and achieving remarkable results. From 1997 to 2016, our school can apply for the scholarship of Japan International Education Association for Short-term Study Abroad Promotion System and the scholarship of Japan Ministry of Education every year through Muroran Polytechnic University. About 50 graduate students and young teachers have received the above two kinds of scholarships. The majors involved are Mechanical Engineering, Software Engineering, Transportation Engineering, Electrical Information Engineering, Environmental and Chemical Engineering, etc.

Second, the university has signed an academic exchange agreement with Iwate University, Japan, to send five undergraduates majoring in Japanese + software to the university to carry out exchange programs. In addition, the two schools also run a postgraduate program. In the past 20 years, more than 100 students have gone to Japanese university for further study and achieved good cooperation results.

Third, the university has signed a cooperation agreement with Ritsumeikan University to send five undergraduates majoring in Japanese + software to the university as exchange students every year. In addition, it has launched a postgraduate program with the School of Information Science and Technology of Ritsumeikan University, sending nearly ten undergraduate students to Japan to pursue their master's degrees.

Fourth, the university signed the Cooperation Agreement between Dalian Jiaotong University and

Tokyo Metropolitan University on Student Exchange Program. The program is a youth exchange program jointly organized by Chinese Ministry of Science and Technology and Japanese Science and Technology Promotion Agency. In China, schools should apply to the Ministry of Science and Technology through Dalian Science and Technology Bureau, while in Japan, Tokyo Metropolitan University should apply to Japan Science and Technology Promotion Agency. According to the school's policy, the School of Foreign Languages first sent 10 teachers and students to Japanese school to participate in the Sakura Science and Technology Program, which was later extended to the School of Mechanical Engineering, the School of Traffic and Transportation Engineering, and the School of Locomotive and Vehicle Engineering. Each year, the four schools send 10-15 students and a leading teacher to Tokyo Metropolitan University for a 10-day exchange on software development. The program, which has been in operation for nearly a decade, has 79 students and 6 teachers participated. Majors involved include Japanese + Software, Mechanical Engineering, Transportation Engineering, Locomotive and Vehicle Engineering. In addition, the two schools also run exchange programs. The School of Foreign Languages sends 5 students majoring in Japanese language and software to Japanese schools for 1-year exchange study every year. At present, nearly 30 students participate in the program to exchange in Japan.

Fifth, for the short-term exchange program for Japanese students in China, the School of Foreign Languages receives students from Tokyo Metropolitan University for short-term exchange studies. From 2016 to 2019, a total of 31 students from Japanese universities has come to Dalian Jiaotong University for a 10-day exchange.

Sixth, for the student exchange program of Hachito Higher Specialized School in Japan, the school signed a cooperation agreement with Hachito Specialized Higher Education School in December 2011. Japanese teachers have visited our school for many times to actively promote the cooperation and communication between the two schools. Through exchanges and visits, teachers and students of both sides have enhanced understanding, promoted friendship, and learned from each other well. From 2011 to 2018, the Japanese school has sent two teachers and 21 students to our school for short-term exchanges.

All in all, student exchange programs are an important part of cultivating high-quality talents. Through the program of students going abroad, the school has promoted the reform of teaching concept, teaching method, classroom construction and management mode. The school can draw on the advantages of Japanese institutions and establish resource sharing. In addition, students can enrich their learning experience and expand their international perspective through exchange programs.[1]

2.2 Overseas Internship Program for Students

The school has signed internship agreements with OT COMNET Japan Co., Ltd., Tokyu Hotel Co., Ltd., Nippon Corporation and Kyoichi Maintenance Co., Ltd. A total of 52 students majoring in Japanese + software from the School of Foreign Languages have been sent to the company for internship. Compared with other internship programs, overseas internship plays a very important role in cultivating students' international academic vision and enhancing their international competitiveness. Through overseas practice and training, students can learn foreign advanced technology and experience the multicultural atmosphere, which is more conducive to students based on the local, look to the world, and actively meet international competition. [2]

2.3 Teacher Training

The school has signed a cooperation and exchange agreement with the Japan Sea International Exchange Center, a Japanese NPO legal person, to carry out teacher training and further study programs. Nearly 20 Chinese teachers from the School of Foreign Languages have been sent to the center for exchange and further study. Through the training, teachers have improved their knowledge and attitudes to varying degrees. After returning to China, the teachers have made great adjustments in teaching, scientific research, international exchanges and other aspects. [3]

2.4 Mutual Visits of Inter-school Delegations

Relying on its geographical advantages, the University has frequent exchange of visits with delegations from Japanese universities and colleges. The above-mentioned universities and colleges that have signed cooperation agreements with our

school send delegations to us to visit and exchange ideas and hold academic lectures. We also sent delegations to the above-mentioned Japanese friendship schools for friendly visits and exchanges. Through the exchange of visits, the friendship at the school level has been deepened, new cooperation areas and projects have been opened up, and the internationalization of school education has been greatly promoted.

2.5 Special Professors and Short-term Lectures

The university employs professors, experts and scholars from Japanese universities as distinguished professors and visiting professors, holds academic lectures for the teachers and students of Dalian Jiaotong University, and carries out academic exchange activities with the researchers of us, which greatly enlivens the academic atmosphere of the university.

2.6 Holding International Academic Seminars

In May 2012, Dalian Jiaotong University held a Sino-Japanese International Academic Seminar. This seminar is co-sponsored by Dalian Jiaotong University, China-Japan Friendship Dalian Talent Training Center, Japan Working Ability Research Association, and co-organized by Waseda University's Institute of Systematic Competitiveness. It aims to learn from the advanced experience and concept of international talent training at home and abroad, achieve resource sharing between China and Japan, and improve and optimize the existing talent training mode and system. More than 60 experts and scholars from China and Japan carried out in-depth communication and exchange on the topic of "Work and Work Ability Cultivation Under the Background of Internationalization", and jointly discussed the breakthrough and innovation of high-quality personnel training mode under the background of internationalization.

2.7 Employing Japanese Foreign Teachers

In recent years, Dalian Jiaotong University has employed more than 30 Japanese foreign teachers to undertake the courses of "five-year dual major" undergraduates and undergraduates majoring in foreign languages in oral, audio-visual speaking and writing Japanese, as well as the guidance of Japanese Corner, Canon Cup Japanese speech

contest and writing contest and Japanese associations.

2.8 Academic Faculty Visits Japan for Exchange

Dalian Jiaotong University dispatched 3 teachers from the School of Foreign Languages and the Sino-Japan Friendship Dalian Talent Training Center to Japanese universities for research and training. 7 teachers from the School of Materials Science and Engineering and the School of Transportation Engineering were sent to Japanese universities and research institutes for technical exchanges, scientific research cooperation and participation in international academic conferences.

2.9 Study in China Program for Japanese Students

By 2023, the university has cultivated more than 2000 international students. The Japanese students are mainly language students who come to China for the purpose of learning Chinese language and culture. In recent years, the university has received more than 40 Japanese students for further study. In July 2019, a Japanese undergraduate majoring in Business Administration of our school graduated successfully and continued to study for a master's degree in China. In addition, Japanese students studying in China mainly come from Tokyo Metropolitan University and other friendly foreign universities.

3. CONTINUOUSLY STRENGTHENING THE SCIENTIFIC RESEARCH COOPERATION BETWEEN CHINESE AND JAPANESE UNIVERSITY FACULTY

3.1 Frequent Scientific Research Cooperation and Exchanges Between Chinese and Japanese Teachers in the Field of Materials Science and Engineering

In November 2016 and July 2018, a professor from the School of Materials Science and Engineering went to Saitama Polytechnic University in Japan for exchange and discussion on AD-XPS testing technology. According to the Research achievements during his stay in Japan, he published a number of SCI indexed academic

papers in Applied Surface Science, Nanoscale Research Letters, Journal of Chemical Physics and other journals. Publish one SCI paper based on the AD-XPS test results, and the research results will be conducive to the further smooth development of the National Natural Science Foundation under his supervision, in-depth exchanges and close contacts with Japanese experts in this field, and help to understand the latest developments in this field and carry out international cooperation.

In November 2018, a professor from the School of Materials Science and Engineering paid a visit to Tokyo Institute of Technology at the invitation of professors from that university. The professor has been engaged in the extrusion rolling melding of magnesium and aluminium alloy and its microstructure and properties for many years. She is in urgent need of understanding the international research trends in related fields and learning the research results, technologies and materials related to the subject. This technical exchange is of great significance for the mutual use of each other's superior resources to carry out higher level of technical exchange, so as to improve the scientific research level of the school and promote the development of disciplines.

3.2 Chinese and Japanese Professors in the Field of Mechanical Engineering Jointly Develop International Talents Cultivation

The professors of the School of Mechanical Engineering have maintained cooperation and exchanges with Osaka University in Japan. Two professors from Osaka University once came to our school to give lectures and academic reports. Our professors are also invited to give academic lectures at Osaka University. In May 2020, Dalian Jiaotong University has established a talent training base with Osaka University.

3.3 Research Cooperation Between Chinese and Japanese Professors in the Field of Transportation Engineering

In August 2017, at the invitation of the professor of the Art Engineering Research Department of Nagoya City University, our professor team of the School of Transportation Engineering went to the Art Engineering Research Department of Nagoya City University for scientific research cooperation. The professor and

members of the research group have long been engaged in research and teaching in the field of transportation planning and management. In November 2016, the scientific research team of the professor undertook the project of "Railway Public Transport Research and Technical Service" of the Market Monitoring and Evaluation Center of the National Railway Administration. In order to ensure the research quality of the research project, the research team contacted the cooperative professor team of Nagoya City University in Japan, and reached the research cooperation intention. Our team visited the Research Department of Art Engineering, Nagoya City University, Japan, focused on the status quo and experience of Japan's railway public welfare transportation, carried out scientific research cooperation in related research fields with the Japanese professors team, and the Japanese professors team assisted in the field investigation of Japan's railway public welfare transportation.

4. PROMOTING COOPERATION WITH JAPANESE ENTERPRISES TO CARRY OUT VOCATIONAL AND TECHNICAL TRAINING

Over the years, the school has carried out training programs with Japanese enterprises relying on the Sino-Japan Friendship Dalian Talent Training Center. The training center has international advanced teaching facilities and equipment. The training teachers include professional teachers from Dalian Jiaotong University and other four universities, as well as Japanese experts and scholars, technicians and managers from major departments of enterprises. The training program includes four fields: software development and engineering management, production management, operation management, and practical Japanese language. The goal of the training is to cultivate international composite professionals integrating Japanese language and professional skills, to improve the ability and business qualification of the in-service personnel and those waiting for employment, to support local enterprises and public institutions (especially Japanese enterprises), to develop Dalian, support Liaoning and revitalize the northeast regional economy.

Since its establishment, the training Center has established talent training base of Alpi Electronics (China) Research and Development Center Dalian, Talent training base of Mizuho Industrial Bank

(China) Co., Ltd., Talent training base of Dalian Nissen Oil Production Talent Training Base and Northeast Asia International Shipping Talent Training base with Japanese enterprises.

Among them, Dalian Northeast Asia International Shipping Talent Training Base is established by the university, Dalian Human Resources and Social Security Bureau, Dalian Port and Port Bureau and Ritsumeikan University of Japan on the basis of Sino-Japanese Friendship Dalian Talent Training Center, with the purpose of providing talent guarantee for the construction of Northeast Asia International Shipping Center. The training teachers are mainly from Ritsumeikan University and other leading shipping experts in Japan. The training base mainly organizes civil servants in the field of shipping and employees of enterprises and institutions to attend training in Japan to learn advanced Japanese experience. The base also provides professional training for personnel of shipping related enterprises and institutions in Dalian and the surrounding areas, as well as graduates and graduates from relevant colleges and universities.

5. CONCLUSION

Over the years, combining the characteristics of railway transportation and software talent training, the university has adapted to the needs of the implementation of the "Going out" strategy of China's high-speed railway. On the basis of consolidating and developing the established inter-school international cooperation and exchange relations, the university has strengthened the communication and exchange with the universities and research institutes related to national railway transportation in Japan, strengthened the cooperation with the relevant universities and signed cooperation agreements. We will promote substantive cooperation such as academic exchanges, scholars' exchanges, exchanges of academic materials and textbooks, information exchanges, student exchanges and scientific and technological cooperation. We will vigorously develop the education of Japanese students with academic degrees in China to enhance the university's international reputation and influence. In the future, the university will continue to strengthen exchanges and communication with its Japanese partner institutions, actively organize and support exchanges and cooperation between academic leaders and professors in Chinese and foreign disciplines, and encourage joint holding of

international academic conferences, joint training of doctoral and postgraduate students, and joint application of various scientific research projects. We should carry out practical cooperation, give full play to the important role of education in the Belt and Road Initiative, and form a new pattern of cooperation with Japanese universities and research institutions with distinctive features.

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