

THE ROLE OF INTERNATIONALIZATION OF HIGHER EDUCATION IN THE INNOVATION ECOSYSTEM AT LE QUY DON TECHNICAL UNIVERSITY

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Abstract

Innovation is one of the topics of interest to many national leaders. It has far-reaching effects on the change in structure, function and operating model of the economic system in general and science and technology in particular. In the innovation ecosystem, the internationalization of higher education plays a very significant role. Summarizing and synthesizing the internationalization experiences of Le Quy Don Technical University (LQDTU) is a reference for orientation for innovation at Vietnamese universities. The purpose of this study is to help provide more practical evidence for the development of strategies and roadmaps to ensure the high quality and effectiveness of innovation at Vietnamese universities.

***Keywords:** Innovation, internationalization of higher education, strategy*

1. SETTING GOALS

In the past five years, Vietnam's economy has developed relatively high and stable. Thanks to its success in combating the Covid-19 pandemic, in 2020 and 2021, Vietnam will maintain a positive growth record, one of the few exceptions in the world. By the mid-2020s, Vietnam will almost certainly become a middle-income country. However, the question is whether Vietnam can continue to develop with higher quality in the next period to become a high-income country. The key to success is to build a science and technology foundation based on an innovation ecosystem with international quality human resources. The fastest way is to attract global talents to work in Vietnam. The second way is to cooperate internationally to train human resources in Vietnam and abroad. In the long term, the second way is the most basic, fundamental and essential method to build a sustainable and rich innovation ecosystem. That is also the strategy that LQDTU and several universities have persistently implemented for a long time and have achieved many promising results.

2. EXPERIENCES OF LQDTU

Currently, LQDTU is striving to become a multi-disciplinary and multi-disciplinary research and training university, integrating with the world university system, a world-

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class university. IHE has a crucial role to play in that process. Grasping this trend, LQDTU considers cooperation development to be one of the top tasks.

The University's leaders always clearly affirm that IHE is one of the significant activities creating a breakthrough in improving resources to serve the goal of building the University into a research university, into one of the leading universities in Vietnam and strives to be in the top 700 of the world's top universities by 2030. From that guiding point of view, the University has proposed many positive and timely policies and measures in the IHE activities in education, training and scientific research. In addition to the cooperation relationships with traditional partners, LQDTU actively promotes the expansion of the scope, scale and form of cooperation, focusing on cooperation with countries with advanced science and technology in the fields of the Fourth Industrial Revolution. Through the IHE, LQDTU has been effectively exploiting sources of support and taking advantage of the goodwill of foreign partners to strengthen the capacity and quality of staff, acquire international experience, develop training and research programs according to international standards.

In general, in the period 2011-2021, IHE in training and scientific research at LQDTU is shown on the main contents as follows:

Firstly, building and strengthening cooperative relationships with international partners in the field of training and scientific research. LQDTU always focuses on expanding the area of international cooperation: In addition to the traditional partners of Russia and the CIS countries, the University has actively expanded its partners to English-speaking countries (UK, USA, Australia...), Asian countries (Japan, Korea, Singapore, India...). In particular, in recent years, LQDTU has expanded its cooperative relationship with many universities from countries with developed educational backgrounds such as the US (Indiana University, Davis University, California), France (Pedagogical University of Cachan, Telecom ParisTech University), Australia (University of Technology Sydney)... LQDTU has been actively building new relationships through many forms, including signing contract documents, collaborating with partners, participating in multilateral programs and projects, international scientific cooperation organizations (ASEAN IVO, Japan Antenna-Transmission Association, British Council, ...). Up to now, LQDTU has established cooperative relationships with more than 173 partners in more than 30 countries around the world.

Secondly, to improve the efficiency and quality of INTERNATIONAL higher education, LQDTU has advocated diversifying forms of cooperation, from mainly sending staff and students to study abroad, the University cooperated in implementing many cooperation contents such as: coordinating in implementing topics according to the

protocol, coordinating in organizing seminars, seminars, scientific talks, co-supervising Ph.D. students, coordinating refresher courses short-term maintenance and even send teachers to visit prestigious research institutions in the world... In the decade of 2011-2021, LQDTU has chaired and coordinated to organize nearly 30 international seminars; signed about 20 memorandums of understanding, cooperation agreements on training and scientific research with foreign partners... These are good opportunities for staff and lecturers of the school to consult and seek more professional knowledge, serving well for their teaching and research work.

Thirdly, LQDTU always actively seeks and exploits research support funds of Vietnam and other countries to carry out research topics and projects to create favorable conditions for staff, students, and students. LQDTU's research approaches an advanced research environment, improves foreign language ability, scientific proposal capacity, contributes to increasing the number of publications and LQDTU's reputation (From 2011-2021, the university has had more than 20 projects applying for funding from international funds).

Fourthly, LQDTU advocates proactively meeting research university criteria and affirming its position on international university rankings. By 2021, LQDTU was ranked 786th and top 10 in Vietnam (according to the SCImago rankings in March 2021). In recent years, there have been more than 300 research projects of LQDTU in the Scopus list. Its average citation coefficient is very high. The number of international articles of the Academy reached approximately five citations/article.

In the coming time, to improve the effectiveness of IHE in training and fostering staff and lecturers, LQDTU will focus on researching and implementing some specific solutions reflected in the strategy of the Project. LQDTU development planning project to 2030, with a vision to 2045 with some main features as follows:

Firstly, it is necessary to actively renovate the content and form of IHE to improve the effectiveness of educational and training cooperation activities of universities, academies, and research institutes in countries in the region and around the world. Accordingly, actively request the parties to jointly build and agree on a cooperation mechanism in the spirit of mutual benefits, create favorable conditions for cooperation activities, and pay attention to the suitability of the parties.

Continue to innovate training contents, programs, methods and forms to improve education quality; diversify training forms to be suitable and attractive to partners, can conduct teacher exchange activities with other schools. In addition to professional content and knowledge, it is necessary to strengthen and focus on training soft skills for staff and

lecturers. LQDTU aims to help officials and lecturers have sufficient knowledge, skills and capacity to participate in research and teaching activities in the integration period.

Focusing on enhancing the efficiency and quality of training cooperation programs with strategic and traditional partners such as Russia, the Czech Republic, the Republic of Belarus and countries that have signed cooperation agreements with the university such as Australia, New Zealand, Japan, India, France.

Secondly, it is necessary to closely follow the overall and long-term plans and programs in the construction and development of LQDTU. Specifically: Project on Planning and Development of LQDTU to 2030 with a vision to 2045, Plan to participate in the international ranking, upgrade LQDTU; Action program to meet the requirements of the Fourth Industrial Revolution in the period of 2018-2025 and the following years...

Thirdly, promote foreign affairs through diversifying activities to introduce LQDTU's image on the mass media through forums, international conferences and scientific conferences.

Fourthly, further, promote the construction and thorough exploitation of facilities and equipment for scientific research in lecture halls to meet the needs of teaching and IHE; especially the teaching function rooms, rooms and convenient living conditions for foreigners (experts and lecturers) to work at LQDTU.

Fifthly, make the most of funds from international funding to organize short-term refresher courses, conduct research projects on Information Security, Radio Engineering, Simulation Technology, Manufacturing.

It can be affirmed that IHE activities play an important role in developing LQDTU's innovation ecosystem.

3. LQDTU'S EXPERIENCE IN COOPERATION WITH A NUMBER OF PARTNERS AROUND THE WORLD

3.1. In cooperation with Peter the Great St. Petersburg Polytechnic University

Peter the Great St. Petersburg Polytechnic University (SPBPU) is a traditional partner of LQDTU in the Russian Federation. The two most prominent areas of cooperation between the two universities are training students of LQDTU at SPBPU and teaching Russian language as well as some short-term courses at LQDTU by SPBPU's lectures. During that long-term cooperation, SPBPU has also shared with LQDTU many of its valuable experiences in the internationalization of higher education.

In February 2020, SPBPU was the first Russian university to hold a large-scale international event abroad. The school actively participates in organizing the forum "Days

of Polytechnic in Berlin", and also acts as the organizer of the contest "Internationalization Strategy - win-win strategy", with the participation of about 100 delegates from more than 15 countries [1].

SPBPU collaborated deeply with TU Berlin in today's education sector focused on enhancing academic mobility programs. For more than five years now, an agreement has been in effect between these universities to jointly implement a dual degree program. The two schools are jointly involved in international ERASMUS+ projects and in 2020 they have again submitted two applications for funding a joint project and to support academic mobility between universities.

“Strategic partnership between SPBPU and Leibniz University of Hannover: the practice of double and triple degree programs”. Leibniz University Hannover is one of the oldest partners of SPBPU. In the summer of 2020, the universities celebrated the 35th anniversary of the strategic partnership, and last winter they summed up the results of the largest project “Strategic Partnership”, the project has been repeatedly recognized as one of the best projects in European practice and has received support from the DAAD for six years. Today 14 international groups continue to carry out joint scientific work within the framework of this project.

The long-term strategic partnership of these universities allows LQDTU’s partner to develop not only three successful dual degree programs but also a unique high school program in partnership with Lappeenranta University of Technology- Lahti. The high school program, although complex in coordination, is a vivid example of the mutual trust in the educational quality of the partner universities.

The experience of the BTU - SPBPU partnership from the establishment of joint laboratories to the development of joint master and postgraduate programs" said of the partnership between SPBPU and the Technical University of Brandenburg Cottbus-Senftenberg.

The stable and long-lasting nature of their collaboration is mainly associated with the complexity of this work, the continuity of generations and the fields of study. Talented students, graduate students and young scientists initiating new research projects and work are all centered around a common science lab.

The next typical example on the internationalization track is the joint student marathon - an innovative product of SPBPU and Graz Technical University.

SPBPU also Practices an international double diploma program with Wildau University of Applied Sciences. The two universities are successfully developing an international double degree program at the bachelor's level, which is a more complicated

process than the creation and implementation of joint master's programs. The programs of SPbPU and TU Wildau are very popular with students. This program has been implemented for 5 years and has been extended for another 5 years.

Typical "General Master's Education Programs and European Projects: Network Programs Best Practices, Erasmus + Projects, Summer Schools for University Sustainability."

Academic mobility is one of the most important parts of the internationalization process. Without it, the development of joint programs, summer and winter schools, and network projects would be impossible. The Erasmus+ program, which enables the development of all these programs and projects, provides excellent support for the growth of learning mobility. The Polytechnic has extensive experience in this: for example, SPbPU is developing a joint master's program in engineering with the City and the University of London. Another unique example of the joint activities of SPbPU and other leading universities in the world is the International Polytechnic Summer School: every year more than 1000 foreign students participate.

Joint programs of international summer schools are a kind of “sandbox” where SPbPU can experiment with different methods and approaches, predicting their effectiveness and potential. If successful, these seasonal programs have the potential to become full-fledged international education programs.

With the experience from SPbPU, LQDTU is also actively researching the possibility of participating in the ERASMUS+ program.

3.2. In cooperation with the Japan Advanced Institute of Science and Technology

Japan Advanced Institute of Science and Technology (JAIST) is a traditional partner of LQDTU in Japan. They signed a Memorandum of Understanding (9/2017), an Agreement on the Student exchange program (9/2017), a Cooperation Agreement in Postgraduate training at the master's level (5/2020) with LQDTU. Through cooperation with JAIST, LQDTU has shared many experiences in English language development in internationalization.

In 2000, JAIST's second president, Etsujiro Shimemura, in his message emphasized that there were no limits on recruiting faculty and admitting students based on nationality or language. The third president, Sukekatsu Ushioda, elaborated with the foreigners present; JAIST had become a cosmopolitan campus in which English is used as a second language [2].

The current president, Takuya Katayama, in his first message [2] reaffirmed president Sukekatsu Ushioda's assurance concerning English language, by highlighting the

increasing importance of English language, because, with 20 percent of students from foreign countries, JAIST is the most international among Japanese HEIs in the science and technology areas. The increase in foreign students is due to doctoral courses being taught in the English language, and every important communication from the administration is in both English and Japanese.

In 2005, JAIST created an English for Technical Communication (TC) program. TC provides JAIST students and faculty with a full range of subjects and advice to support their efforts to publish internationally in prestigious journals and become full members of the scholarly community. In 2009, TC became a Global Communications Center (GCC).

Many classes in English of all ability levels for science and technology professionals are offered to students at JAIST. They range from self-study in the popular Language Lab (LL) environment and interactive workshops to specialized courses for conference presentations in English and tutoring services for conference presentations. English-language recommendations, specialized courses for research publications, and advice and editing support for research publications.

Students can self-study using the on-campus LL system to enhance their skills. For specialized courses in a conference presentation in English, students and staff can learn effectively by attending a specialized course during the term or in an intensive one-day course. Video feedback is provided to participants to improve their presentation skills.

There is also a specialized course for research publications and advice and editing support for research publications. The center provides essential tips for writing persuasive essays and accurate articles in English. Members are encouraged to enroll in specialized courses during the semester or take an intensive course. After attending the course, students use services that assist them in publishing and presenting their research internationally. “Communication in Integrated and Interdisciplinary Fields” allows students in this program to learn a wide range of communication skills needed for engineering research and development in integrated and interdisciplinary fields, to enable them to work in emerging fields of research and related disciplines.

Through lectures, writing practice, and discussions between students and researchers/scholars in different fields, participants gain the ability to explain their research to people outside of their field. They learn to understand research in other fields. These classes teach participants to evaluate their skills, understand the comments and ideas of others, and develop a global perspective. Participants also practice making business plans in groups, to improve their interpersonal skills and project management abilities, based on seamless integration of fundamental research and applied research.

4. PROPOSALS

LQDTU is making many efforts in the process of internationalization. We are actively participating in internationalization programs of many organizations such as the British Council, Aus4innovation. LQDTU has been working hard to improve its rankings on international rankings (Scimago, QS...). The university also plans to study Crossref alliance membership, subscription to Scopus database access, receive upgrade advice from Scimago. From our experience, we have some recommendations as follows:

The 1st proposal: Vietnamese universities should change their approaches to resource sharing, such as database resources, administrative experience resources, partnerships in internationalization. That will make the internationalization process stronger. And the more open exchange between a Vietnamese university and universities around the world. Therefore, "internationalization at home" is necessary among Vietnamese universities that share the same vision of IHE to promote the innovation ecosystem.

The 2nd proposal: Linking Vietnamese universities that share the same vision of higher education internationalization to promote the innovation ecosystem. These linked groups can cooperate more in initiatives, programs and actions on internationalization as the East Asia Leadership Program, the GGP program.

The 3rd proposal: Establish a coalition of Vietnamese universities in internationalization as the US Ivy League system. The standardization of internationalization activities will make the IHE of the members more convenient.

The 4th proposal: It is necessary to respect the precious foundations of each school with Vietnamese identity. From there, apply international standards and international approaches to enhance those identity values. That helps to contribute and enrich the science and technology in the world.

The 5th proposal: researching the possibility of participating in the ERASMUS+ program.

Universities in Vietnam are the latecomers in the process of IHE. Therefore, the internationalization experiences of the areas analyzed above are a good reference for our IHE orientation. This paper provides more practical evidence for both government policy-making and the governance level of higher education institutions.

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