

## Internationalization of Higher Education Under New Circumstances: A Case Study on Changchun University of Science and Technology

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### Abstract

The generation of higher education internationalization has its own profound political, economic, technological and cultural factors, and the economic factor is one of the most important factors. Driven by economic interests, developed country has accelerated the output of educational resources to international markets. In order to enhance competitiveness and international visibility, institutions of higher education in developing countries have increased the speed and depth of cooperation with the developed countries through a variety of ways. The author proposed recommendations about the internationalization of higher education from the analysis of the connotation of internationalization of higher education and its causes. This thesis uses the nearly two years of Changchun University of Science international education as an example.

**Key words:** Higher education; Internationalization

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### INTRODUCTION

Driven by economic globalization and trade liberalization, international education market has become increasingly open. Educational resources have been configured in the international community. The flow of education elements has been accelerated internationally. The exchanges and cooperation of international education have become increasingly frequent. The degree of mutual influence and interdependence between educations around the world continuously improve. Mutual exchange, mutual competition, mutual tolerance and mutual agitation between national educations jointly promote prosperity and development of the world. From the reform and opening up to join the WTO, internationalization of higher education in China has become our unavoidable and urgent issue. In 2010, China issued the “National Long-term Education Reform and Development Plan (2010-2020)”, that the first time comprehensively and systematically identified internationalization of higher education as the development of strategic directions of national education.

### 1. CONNOTATION OF INTERNATIONALIZATION OF HIGHER EDUCATION

The functions of the ancient university is teaching and training personnel, while modern university has both teaching and research functions, which become a specialized agency for personnel training and scientific research. In addition to teaching and research functions, modern university also takes up the important social function of social services and cultural heritage.

Service targets has become from singleness to diversity and from domestic to international. In academia, “internationalization of higher education” this concept has been unable to reach agreement. The International Association of Universities of UNESCO proposed that, “internationalization of higher education is the process of combining point of view and atmosphere of cross-border and cross-cultural and the major functions of university teaching work and social services, it also is an all-inclusive changing process which involves internal and external changes of the university, both the bottom-up and the top-down process. There is also the school’s own policy orientation.” Most Chinese scholars believe that, internationalization of higher education refers to depend on domestic basis to face the world and the future. It is the combining process of university education philosophy and running mode of cross-border and cross-cultural with its own teaching, research and social services. After all, under the context of economic globalization and trade liberalization, the core or essence of internationalization of higher education is that world countries wants to make full use of both domestic and international education market, optimizing the allocation of resources and elements of the country’s education, seizing the commanding heights of the world education, training competitive high-quality talent internationally, all for the national interests.

## 2 . M O T I V A T I O N O F INTERNATIONALIZATION OF HIGHER EDUCATION

Internationalization of higher education was originally just the educational development ideas proposed by European and American scholars and some international organizations, but it is gradually received by some important developing countries, for many reasons.

### 2.1 Political Factors

After World War II, in order to maintain the superpower status on the international stage, the United States and the Soviet Union regarded the developing countries as the important areas to expand its political and economic power, promoting the internationalization of higher education around the world. After the disintegration of the Soviet Union, world pattern changed from bipolar into multi-polar. The growing economic strength of developing countries has increased the demands on quality higher education resources. They hope that through the increasingly frequent and close international cooperation under the context of globalization, introduced high-quality education resources in developed countries to promote the rapid development of national higher education and national high-level training of qualified personnel. Developed countries have become the exporter of education, while developing countries has become

the importer of education, thus forming the flow of high-quality education resources in the international. Internationalization of higher education around the world has become an irresistible trend.

### 2.2 Economic Factors

Until now, economic factors are considered to be the most major factors of internationalization of higher education. In the 21st century, the pace of economic growth in developed country has become increasingly slow. Also, the economic crisis is leading developed economies faced with the dilemma of recession. The government has to cut the budget to reduce the financial investment in higher education. In this case, most universities will focus at developing country, which has a rapid economic development and strong national economy growth. Government adopted administrative means to attract foreign students, encouraging universities to establish branch campuses in developing countries. They adopt 2+2 or 3+1 and other modes to have international cooperation with foreign universities. Thus, they can obtain a higher economic profit. With the U.S. government as an example, U.S. funding for a variety of exchange programs has been compressed year after year since 2010. Government helps American universities to recruit the best students around the world via organizing the international student week, modifying visa and other methods, so that it can increase the economic benefits. For developing countries, internationalization of higher education via international cooperative education allowing its students can get a foreign university degree without going abroad, it can greatly reduce the cost of its economy.

### 2.3 Technological Factors

Nowadays, science and technology are advancing with each passing day. Universities in any country cannot maintain its leading position within all fields of science. Coupled with increasing number of interdisciplinary and interdisciplinary research, they must be carried out exchanges and cooperation with other countries, driving the pace of internationalization of higher education. Besides, strength of today’s developed countries in science and technology is still stronger than other developing countries. A large number of scientific and technological personnel are gathering in the U.S. and other developed countries for decades. Developing countries’ economic development and scientific and technological development urgently needed technology professionals with international advanced level. Internationalization of higher education can promote talent and knowledge flows between university of developed and developing countries. It can introduce state-building talents needed in the short period of time. Thus, it can enrich the knowledge and discipline system of the state, improving the overall technological strength and technological innovation capability of developing countries.

## 2.4 Cultural Factors

Universities, as production, transmission and reproduction cultural institutions, play an important role of cultural exchanges in the world. It becomes an important carrier of outstanding cultural heritage and an important source of innovative ideas and culture. Universities are not only responsible for transferring and carrying forward the fine traditional culture of the country task, but also drawing on and assimilating foreign advanced culture, so that the native culture can reflect its national characteristics and meet the international development trend. Exporting education from developed to developing countries is also exporting their cultural, which promotes the world cultural exchange. Therefore, cultural exchanges between universities around the world have become an important part of internationalization of higher education.

## 3. RECOMMENDATIONS OF INTERNATIONALIZATION OF HIGHER EDUCATION

### 3.1 Establishing the Concept of International Education

The concept of international education is an important prerequisite of internationalization of higher education. Internationalization of higher education, as the economic globalization is an unstoppable trend. It is increasingly important part of the international relations. It helps awareness and understanding the countries cultural around the world, promoting the development of friendly relations; It can promote the progress of science and technology; it can enhance the school's international reputation and influence, improving the country's international competitiveness; Teachers and students can develop an international perspective, cultivating high-quality compound talents; it can bring in quality overseas talent, improving the structure of teaching staff. With Princeton University as an example, the school principal Shirley M. Tilghman has published a report "Princeton in the world", it states that demanding "serving the United States, serving the world" as the new educating mission. With world-class academic research, excellent teaching, first-class students, the unique academic and cultural as the basis of its international, the Princeton University's internationalization process is fully launched and promoted. Driven by state's "Twelve-Five" planning and Jilin Provincial "universities in strong province", universities establish the concept of international education in their future construction and development—facing the world to conduct international education; using available resources and achievements in the international market to open up education markets; focusing on the development of high-quality international education exchange resources; actively introducing advanced

management concepts and methods of education; and creating leading universities with world advanced level and able to cultivate and foster high quality talents.

### 3.2 Creating Internationalized Curriculum

Internationalized curriculum is an important carrier of internationalization of higher education. In order to adapt the trend of internationalization of higher education, cultivating international talents with vision of the world, familiar with international affairs and mastered academic frontiers, construction of internationalized curriculum should adopt bilingual education, using original materials in English, establishing language centers and other institutions to cultivate students' language proficiency. It should strengthen drawing on lessons from foreign advanced curriculum philosophy, establishing linkage mechanism of the course market, enhancing the social adaptation of courses, streamlining courses and compressing lesson hours, raising the proportion of elective courses. Thus, there is full respect for the self-selection and self-design of student. Since 2005, this university has introduced optical original materials from the University of Arizona—College of Optical Sciences for optical postgraduate education, so that students can learn about the latest research results in a timely manner. In order to further strengthening the role of teaching materials, university and the University of Arizona explore the establishment of optical features classes. Reference to the training model, curriculum, teaching programs, curricula of Optics Department in University of Arizona, suitable students' learning curriculum of optics for university are developed. All courses are taught in English, which can train a number of compound talents with proficient in both professional and languages.

### 3.3 Building an International Research Platform

International research platform is an important way of internationalization of higher education. Strengthening the cooperation with internationally renowned universities and research institutions, establishing a joint research platform, providing a broader research space for researchers, active participation in the international forefront of scientific research, access to the latest research results and information, so that it can continuously improve the research capacity and overall strength of the university. In recent years, university actively cooperate with school-related research institutions in Europe and America and other countries to build a platform for joint research, cooperating with New York State University at Buffalo to jointly build the "Nanophotonics and Biophotonics Joint Research Centre", which created a joint international research and developed a new model for senior personnel. This centre being established three years has published 85 papers, including 68 SCI papers, 35 patent applications and 5 authorized patents. Also, there is 78 applications of scientific research task, including 9 National Natural

Science Foundation of China projects, cultivating more than 100 postgraduates and doctoral candidates; cooperating with Laser Zentrum Hannover in Germany to jointly build the “German Laser Processing Technology Training Center”, which jointly promote the development of laser processing technology. This center has been approved as Chinese Ministry of Science and Technology Cooperation Base; cooperating with University of Bedfordshire in UK, University of Oldenburg in Germany, University of Konstanz in Germany, Tampere University of Technology and other universities to jointly apply for the EU Seventh Framework Programme. With the support of this projects, it cooperates with Bedford UK university higher education institutions to build “Computer-controlled and nano-manufacturing Joint Research Centre”, which effectively promote the rapid development of school science and the flow of foreign researchers.

### 3.4 Constructing the International Student Structure

International student structure is an important sign of internationalization of higher education. The overseas students of world-class universities usually accounts for 13.4% of the total number of our students. There is a higher proportion for graduate students, approximately 29%. Institutions of higher learning in China should face the reality of international education and economic globalization. On one hand, it should actively encourage students to study abroad, making full use of foreign educational resources for our training personnel; On the other hand, it should formulate corresponding policies and improve school conditions, expanded to recruit foreign students, further exploring the international higher education market and actively developing international education industry. In 2012, relying on national key disciplines and excellent optical engineers plan, university has become the first universities of national China Scholarship Council project, “Outstanding undergraduate international exchange programs”, and it sent 12 students to the United States and Canada to study their curriculum. Conducting exchange program with Delaware State University, the University of Ottawa in Canada, Okayama University in Japan, Norway Nordland University and other institutions, since 2012 92 students have been sent to go abroad for study or pursue a degree course. There is three hundred students annually from more than sixty countries has studied for a degree in university.

### 3.5 Creating an International Teaching Staff

International Teaching Staff is an important indicator of internationalization of higher education. In order to cultivate talents with consciousness of the world, the global concept and mastering the world of scientific knowledge, it should has a teaching force with integrated internationalization of higher education. Currently,

the proportion of teacher corps in higher education in China with experience of studying abroad is substantial increasing, while the proportion of introduced foreign experts is relatively low, and most of them are for short-term teaching. Universities in internationalization must adopt an actively “introducing talents” task, attracting foreign experts and scholars to join the teaching force. Especially, it should focus on the introduction of professional teachers, so that it can assure the internationalization of faculty. Since 2012, university has sponsored more than 50 teachers to go to the University of California at Berkeley and other high-level universities abroad and research institutions to carry out joint research via China Scholarship Council “Young teachers training abroad project”, “Local cooperation projects” and other school and institutions exchange projects. At the same time, it hired internationally renowned experts from New York State University at Buffalo, University of Oldenburg in Germany, Tampere University of Technology in Finland, Hokkaido University in Japan and other universities to give lectures and teach students via high-end foreign experts project of State Administration of Foreign Experts Affairs, FP7 research projects, school self-financing and other ways. It greatly broadens the student’s knowledge and convergence with the international frontiers of knowledge more quickly.

## CONCLUSION

Carnegie Education Policy Council President, Dr. Clark Kerr proposed that, “internationalization of education is one of the inevitable major challenges for all universities. Therefore, it should develop related policies and expand the international dimension of American higher education.” On the basis of inheriting traditional mode of education internationalization of higher education in developing countries, it needs to actively explore new modes of cooperation. For example, resumes overseas institute campus, branch, and experimental base in foreign countries, but also with a spirit of innovation and innovation. Foothold in our country and on the basis of the actual university, it should actively create a cooperation model with its own characteristics suitable for their own development.

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