

Faculty Always Not Enough for High Education

-----Concerns on talents at colleges and universities

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Abstract—Contradiction and pressure from transformation and upgrading has been turning into deep consideration about higher education talents training following the completion of 30-year of economic reformation in China. Higher Education is the fundamental engine for sustainable economic development. The appeal of promoting the shift from big country to great power with higher education has more concerns on the higher education talents training.

I. CORRECT UNDERSTANDING OF CORNERSTONE ROLE IN THE "PLAIN" PHASE OF THE HIGH EDUCATION TALENTS

Experts from high education always refer the fundamental education at university as "plain" phase education. According to statistics, the total number of higher education reached 31,670,000, ranking the first in the world. There are 2762 universities colleges covering university and adult education. There are 755 graduate schools, composed of 481 universities and 274 research institutions. Furthermore, there will be averagely the of recruitment of 65,600 doctoral and 494,600 master candidates each year. There is the enrollment of 1645,8000 students Averagely, there are 50,300 doctors and 379,700 masters graduates. The total nuto mber of 2,204,8000 faculty, including 1,392,700 full-time teachers. In general, the student to faculty ratio is 17.42:1. The total construction areas at university are up to 780,760,000 square meters (including the independent usage of non-proprietary). The input to the research instrument is about RMB 255.5 billion. There are lot of explanation and concern on the tremendous numbers.

(1) It provides sustainable human resources guarantee for national income summed up to 54,000 billion. In terms of variety of disciplines at comprehensive universities such as Fudan university, it is enough to cover all agricultural, industrial and service industries according to national economy with 20 categories and 98 classifications specified by national industry classification (GB/T4757-2002).

(2) It helps to transform from conventional elite education to mass education successfully. The reformation and opening up began in 1999, which results in gross enrollment rate at high education increasing from 9.8% at the beginning to 15% in 2002. In 2011 it reached up to 26.9%, which creates a "Chinese speed" record in the history of global high education. It turns China into a great country of high education. Although the education is correctly corresponding to the economy, taking to make the national dream, the great rejuvenation of the Chinese nation into reality, it is not only a manifestation of high

education achievement, but also a serious challenge in the field of high education along the road from big country to power one.

(3) Generation by generation, we succeed to carry forward the Chinese nation's century-old aspiration to strengthen the country of high education. It can be traced back to Thought Reform and Westernization Movement in the late 19th century. It was widely accepted the thought of "barbarian technology to the barbarians" by the Chinese intellectual elite and the Manchu court. It was a zig-zag path from CaiYuanpei in charge of Beijing University in 1917, the learning of Soviet model to the modern concept of higher education due to the reformation and opening up. It is worthwhile to have Tsinghua University, Peking University, Fudan University and Sun Yat-sen etc at their original locations under hundreds years of vicissitudes, although most of the some public institutions changed and disappeared. Professors and students continue to pass on knowledge dissemination and creative activities as in the past. Essentially speaking, the ambition to boom industry and strengthen our nation by education remains unshakable and become even firm as time goes by.

II. "PLATEAU" PHASE OF TALENTS ON A TEAR

In the 21st century, the global competition for talents has turned into a national economic revitalization strategy. Corresponding to the fundamental "plain" education, it is regarded the human resource work related to Thousand Talent Program, Yangtze Scholars, Distinguished Professors, Researchers and so on as "Plateau" phase of the talents. In the driven of knowledge economy, high education has been given the mission of the main force of knowledge innovation. The contradictions brought by shortage of "Plateau" human resources is likely to continue in long term with the rising of China's economy in the world.

(1) The leading role of the overseas talents is an important way to shorten the gap between China and the world. At the time of the foundation of the nation, Qian Xuesen, Li Siguang, Deng Jiaxian, Wu Wenjun and other distinguished overseas talents, returned to the motherland and established some remarkable feats for the development of new China's industry, research, education and national defense construction. It attracts more and more attention to the importance of world talents for national development under the current situation. There are many overseas returnees, counting for 72% of national key project leaders, and 81% of Chinese Academy of Sciences together with 54% of Chinese Academy of Engineering. In 2006, the leaders of 67% of Natural Science

Award winning projects, 40% of State Technological Invention Award and 30% of the National Science and Technology Progress Award Project were "returnees" [1]. Therefore, under the rapid development of world economy and science, it is our consensus to make all efforts to attract overseas talents and share the world human resources.

(2) Contradiction among economy, the scale of education and the growth rate of plateau personnel is becoming increasingly prominent. History and reality tell us that the booming of high education is always interlaced with the country's prosperity. A strong high education system is closely related with a powerful country. American is an internationally recognized powerful high education country, such as Harvard University, MIT, University of California, the California Institute of Technology and other institutions, which play an important role on the American economy. According to the latest news, in the last five years, 10.35% of the universities, in terms of the number of 257, have been approved by the Ministry of Education to change the names. In addition to the upgrading from the college to university, the terms of science and technology, finance, industry, commerce are coming into many names of the universities. From the overseas "thousands of talent people plan" in 2008, there are 2263 overseas returnees in 2012. Meanwhile, with the implementation of the Ministry of Education of the "Chang Jiang Scholars Program", a total of 115 institutions of higher learning have recruited 1308 Changjiang Scholars for 10 years. When count the 1569 people of the "Hundred Talents Program" implemented by Chinese Academy of Sciences since 1994, The total number is just a little more than 5000. According to the scale of our economy and the current growth of the university's disciplines, it is evident extremely not enough in the terms of the number.

(3) It is quite urgent to adjust the relationship of introduction and cultivation of the plateau talents. According to the world high education, the high education was not established overnight. The introduction of talents can quickly improve disciplines, teaching, which is an understandable fact. However, if it is done improperly or has some other factors, the introduction of talents will become a "Flying Pigeon" brand. It will not only be a waste of funds, manpower and resources of the university, but hurt the construction of the original plain, plateau talents at the university. It consequently can't be made up by money. Therefore, cultivating local talents, introduction with the projects and the prompt of the projects to construct is the eternal theme of Chinese high education.

III. "PEAK" TALENTS REFLECTS OF THE NATIONAL WILL

High education entrusts with the hope of a nation. Question of Qian Xuesen should be regarded as a calling for the revitalization of the nation rather than expectation of high education. Today, universities of ten thousands of students are everywhere in China. However, when we think about California Institute of Technology, repeatedly mentioned by Qian Xuesen, which only owns 1000 teachers, 2000 students, resulting in 31 Nobel laureates, we should have deep consideration in the high education system. Under the driven of the knowledge economy, high education is increasingly becoming the core agenda of national development. The United States carried out the "Innovation America" action, the British established the Science and Innovation Investment Plan,

Canada launched innovation strategy, Russia developed Assessment criteria of the innovative university. The whole world is competing for peak talent drastically. In the globalization of the economy, it should have strategic view in the construction of the peak talents towards the regionalization and localization.

(1) History provides a new stage for the construction of the peak talents. China is a large agricultural country, having a long way to go to complete the course of industrialization. We have missed the historic strategic period again and again in more than 100 years before our reformation and opening. Because of peak talents, western developed countries finished their industrialization process very early [2]. Due to some historical reasons, we found that Germany had gained 136 significant inventions in electricity, optics, thermodynamics and so on. Among the world's 100 significant inventions in physiology, 89 were made by the German. By contrast, there was no science and cultural maestro like Leibniz, Einstein, Planck, Born, Heisenberg's and so on in Chinese top talents. Automobile, train, steamer, aircraft, camera, cell phone along with our daily electric appliances, transportation and communication are all, probably, the original work of the western top talents. However, China is try to accomplish the social modernization task which had taken the western countries about 2.5 centuries. It is very critical to grab the historical opportunities of industrialization and urbanization. The great renaissance of the Chinese nation is the starting point and destination of the top talents' construction. According to statistics, among the leading scientists in the world from 2002 to 2006, 112 were from China. What's more, on the list of 9073 scientists who were holding a leading positions in the 158 world's first-rate science organizations and 1566 sub-organizations, 206 were selected from China.

(2) It is very important to solve the new challenges of peak talents construction. The contradictions from the accumulation of systematic problems are interlaced with the external pressure of speeding up the economy change over the past 60 years. The functions of the universities are training, scientific research, social services and cultural heritage. The cultivation of the talents is the key. The construction of the peak, plateau and plain talents is a relatively dynamic concept.

With the rapidly growing of the economy in China, higher Education plays an irreplaceable role in sustainable economic development. We must clearly recognize the cornerstone role of plain talents in promoting fundamental education, together with the undeniable importance of plateau ones regarding to construction of an innovative country. Meanwhile it should be correctly understood that peak talents should be regarded as a pressing appealing for the revitalization of our nation. In addition, we should treat higher education globally in contemporary globalized world. Only by sparing all efforts to attract overseas talents while cultivating local talent through various ways, can we effectively and rapidly deal with the problems of the shortage of talents.

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