

## Research of the Growth Rules and Training Strategies of the Tip-top Innovative Talents in Colleges and Universities

SHI Qinhe, GUAN Yamei

Nanjing University of Finance and Economics, Nanjing City, P.R.China, 210023

**Abstract:** To cultivate the tip-top innovative talents in various fields becomes an important way to realize the economic and technological development and enhance the comprehensive national strength in current world of every country. Therefore, facing the problems, identifying and correct analyzing the reasons and finding reasonable countermeasures and solutions to improve the ability of cultivating outstanding innovative talents in our universities has become imperative. This is the only way to supply outstanding innovative talents having both ability and integrity for our innovation- oriented country.

**Keywords:** Tip-top innovative talents, Growth rules, Training strategies

### 1 Introduction

The world economic competition and comprehensive national power competition have become to the talents and national quality competition, meanwhile the new round of international competition focuses on the competition of the talent with science, technology and competitiveness and cultural quality. Under the background of building an innovation-oriented country in China, colleges and universities especially high-level research universities should take responsibility of cultivating outstanding innovative talents. In recent years, a lot of high-level universities have undergone diversity exploration and achieved initial results in outstanding innovative talents training. However, to be honestly, we met the “bottleneck” at this stage of exploring the law of growth and training of outstanding innovative talents in universities.

### 2 The Status of Top Creative Talents of University Culture and Problems

#### 2.1 The status quo of top creative talents training in colleges and universities

To date, a total of 33 domestic universities focus on training top creative talents, of which 15 colleges set up training bases, 9 colleges with culture test area, 6 universities opened innovation institute, 3 institutions set up personalized professional. What they have in common is mostly based on the existing resources of the school to carry out. from the perspective of the entire conducted time span, more than 10 years accounted for 15%, 5-10 years accounted for 21%, 2-5 years accounted for 54%, 1-2 accounted for about 10%, and 92 % of institutions are held after the 16th Party Congress, when the strategy of reinvigorating China through human resource development put forward. From the results, the majority of school administrators consider the effect of their own development programs undertaken outstanding, but the indicators on the employment rate, and no significant improvement.

In the 33 institutions of higher education, for cultivating academic talents of colleges 18, target is to cultivate talents for the 8, aiming at training applied talents of 7. Thus, 55% of institutions will focus on academic elitist culture. Investigate its reason, probably with our education has traditionally heavy research capacity, light weight practical knowledge. Ironically however, is that the institutions of managers almost unanimously whether colleges can cultivate top-notch innovative personnel or the number of personnel training and linked to the level of the institutions: almost 100% of the managers think that “985” colleges completely have the ability to cultivate top-notch innovative talents, some of the “211” colleges and universities. While other undergraduate course colleges and universities cultivate outstanding talents were less than 40%, the private colleges and vocational colleges have the potential to be excavated, but currently does not have this power. The causes of this phenomenon are the government funds allocated and faculty. However, many business owners do not agree, they think, the

quality of students uneven, college level can only explain the teachers' strength is strong, the advantages and the amount of talent quality cannot assert.

## **2.2 The problems existing in the top creative talents training in colleges and universities**

### **2.2.1 The utilitarianism of training objectives**

China today is difficult to cultivate high-quality innovative talents, and it is also very difficult to cultivate the master. Performance for the large number of be flashy without substance engineering and planning, the establishment of key classes in order to highlight the teach students in accordance with their aptitude, emphasizing the leaping development of fast forward. However, this did not fully think about the urgent need of human development and how to play as human potential. Behind utilitarian train personnel training is not only the amplifier, this training model does not comply with the basic rules of human growth. Can't realize the historical mission of talent training have both ability and political integrity.

### **2.2.2 Personnel selection mechanism unscientific**

In the face of unscientific and not a comprehensive selection mechanism, students' creative thinking is difficult to play, so the cultivation of innovative talents is not helpful. College entrance examination scores first educational system did not consider the structural differences between scores of subjects, did not examine differences in the overall quality of students' interests and specialties, moral conduct and social activities, colleges and universities in the admissions process, there is no autonomy, contrary to the selection of top creative professionals in mind. The premise of training of top creative talents is talents selection. Only the scientific and effective selection mechanism will make the real talents to stand out.

### **2.2.3 Blind college enrollment reduced quality of training**

Some colleges and universities themselves blindly pursuing big perfection, regardless of personnel training and education law, blind enrollment, can only lead to the Great Leap Forward and academic schools, resulting in the quality of education landslide, defeating the purpose of education. There really is not rich in competitive talent backing, our country would not be built into an innovative country. Faculty caused by a lack of enrollment, graduate declining academic standards and other issues are not conducive to the cultivation of top-notch creative talents, is not conducive to China's building an innovative country.

### **2.2.4 Outdated concepts of education**

The traditional concept of education and teaching, the importance of knowledge to impart contempt ability, attention to quality training professional education contempt, contempt innovative educational emphasis on inheritance, teaching concept, a serious impediment to cultivate innovative talents. The highlight of knowledge rather than ability, common light personality, inculcation education teaching characteristics of light guide, drag to kill the students' initiative and independence, to enable students to explore the knowledge lost opportunity, also lost the sense of innovation and creativity.

## **3 Comparative Analysis of Top Creative Talents Training Pattern in Colleges and Universities in the Developed Countries**

### **3.1 Analysis of top creative talents training pattern in colleges and universities in the developed countries**

#### **3.1.1 Analysis on the objectives of practicing top-notch innovative personnel**

American culture top creative talents in the community need to integrate the culture of innovation among ideas. Japan especially emphasizes the cultivation of the elite and the internationalization of talents for enterprises. Germany stressed the need to develop the country's complex talent and high-level expertise. Three top-notch innovative personnel training objectives embodied in the form of its covert political requirements to achieve national interests and political objectives.

#### **3.1.2 Analysis on the system of practicing top-notch innovative personnel**

American colleges' training system adapted to the diversification of education goal orientation and the cultivation of the professional style, which is its advantage. Germany's personalized training system for talents training and development is especially beneficial to the development of basic research and applied basic research. Japanese universities draw lessons from to absorb the merits of Germany and the United States outstanding talents cultivation.

### 3.1.3 Analysis on the teaching mode of practicing top-notch innovative personnel

American teaching organization form are diverse, there are lectures, seminars, LABS, case analysis, etc. Teaching organization is focus on the effect of classroom teaching and the teaching content, rather than the form of teaching. The German University "Ximingna" (Simunar) teaching mode is a kind of important teaching form generally adopted. An important teaching organizational form in Japanese universities is the seminar and academic team.

Great flexibility of American college teaching methods, teachers also use new means of teaching multimedia teaching, distance learning, etc. The German university advocates the use of different scenes and teaching model to teach. Japan put experiential learning method throughout the teaching process, training students' personality and creativity.

## **3.2 Revelation of the mode to cultivate super excellence people in colleges and universities**

### 3.2.1 Innovating the mechanism of cultivation in order to accelerate the way of cultivating super excellence people

The according of evaluating students who will be admitted in high schools does not lie on some fixed evaluating system. This indicates requests are not only on students' intelligence but also on their non-intelligence; High schools judge students by exam scores and their recommend. Multiplex indexes make contributions to students' all-around develop, and in this way we can find more professionals. The target of multiplex reformation in China is forming this evaluate system. We should set the conception that science is harmonious to art. In addition, we should update educational conception and reform the training system of talents and innovate talents cultivation model. Encouraging pilot colleges steadily increase their own efforts to pick out the more outstanding creative talents.

### 3.2.2 Reforming the curriculum and teaching methods, focus on cultivating students' innovative ability

United States, Japan and Germany attach great importance to general education on the curriculum system. Universities set development programs according to the characteristics of their own, to form a free elective system, encouraging students to elective courses by crossing-school and crossing-specialty, which is propitious to cultivate innovative talents. Universities in China should learn from its practices, promoting research teaching which is constructed of students' exploration, and stimulate students' innovative consciousness and passion through inquiry teaching and learning. In the teaching process, teachers should use discussing, case teaching, problem-based learning and other teaching methods to encourage students to boldly post new ideas, to stimulate enthusiasm, to be creative and improve innovation capabilities.

### 3.2.3 Strengthening the integration of teaching and research, enhance students' innovative ability in practice

Our research universities should focus on training the students' research capacity and exploratory experimental courses also should be increased. Laboratories should provide students with practical platform, which need to expand the degree of openness. Our country may borrow ideas from Stanford University which is based on Silicon Valley that can provide a platform for undergraduate training, practice and entrepreneurship. Chinese universities should strengthen the training base construction, to provide students with a good practice platform, sublimating the theory in practice and develop practical ability and innovation ability of students.

## **4 Growing Law of Top Creative Talents in Universities**

### **4.1 The law of inheriting teacher**

The law of inheriting teacher, which refers that apprentice gets the guidance from the master in the process of education and training personnel, makes that the former achieve a multiplier effect in the course of succession and creation. First, teacher should “choose the world of excellence and teach”. Second, teacher should be words and deeds, enlightening students in early academic. Third, teacher should teach him to fish, and teach a unique research method.

### **4.2 The law of being talents in practice**

Study personnel found that “the creation of effective practice taught law”, which means that oneself must be a talent when effective practice exceed a certain threshold value in his practice of creating around talent direction. Growth of top creative talent follows this rule that contains three main points. First, clearing the direction of practice. Second, accumulating the experience of practice. Third, methods of practice being appropriate.

### **4.3 The law of collaboration**

The law of collaboration aims at the spirit that some people carry out voluntary cooperation and make collaborative efforts in cooperation in order to achieve the fixed objectives. It often pools the resources and talents of all members of the team together. We have to blend us into a team and think on the basis of the team in the course of work but not alone, because collaboration is an initiative awareness. Thus, spirit of cooperation is an important external growth law of top-notch creative talents.

## **5 Countermeasures and Suggestions of Accelerating the Training of University Top Creative Talents**

### **5.1 Establishing new mechanism of cultivating innovative talents that integrates teaching, research and production**

Universities should build a platform to strengthen the cooperation of teaching, research and production. New mechanism of cultivating innovative talents that contains enterprises, universities and research institutes that all could be formed. First of all, government should establish a research undergraduate-participating system that various laboratories, internships places open to students who participate in research and innovation activities unconditionally. Besides, universities should pay attention to the students’ hands-on practical ability to promote the understanding and application of theoretical knowledge of students’ ability to theory. Last but not least, universities should develop practical education teachers with strong ability and provide specialized vocational training through the combination of “going out” and “bringing in” and the integration of teaching, research and production.

### **5.2 Boldly exploring various modes of top-notch innovative personnel training**

Universities should boldly explore various modes of top-notch innovative personnel training, reforming and innovating the existing model, which reflects the target that focus on the students’ goal of a comprehensive capacity building. Firstly, we should update the concept of education to cultivate excellent compound talents as a starting point at both ability and integrity, compatible of arts and science and independent thinking from the cultivation objective. Secondly, from the cultivation content, we should promote the general education to focus on interdisciplinary training and pay attention to training top creative talents in an international perspective. Thirdly, from the cultivation method, we should pay attention to the reform of teaching mode and teaching methods and establish a teaching system that is a student-centered, teacher-led combination of theory teaching, practice teaching and research study.

### **5.3 Establishing a special fund of top-notch creative talents**

Universities can establish a special fund of top-notch creative talents, which contains the fund of instructor supporting activities, the fund of renowned scholars giving lectures, the fund of students touring activities and so on, to cultivate students, recommend and cultivate full-time teachers, popularize results, etc. We may also encourage students to conduct scientific research independently. Universities strongly support students to do it by the form of applying for school funds. Meanwhile, special student research fund should be established for experimental class alone. Besides, teachers can encourage students to choose topics and research by themselves to improve students' independent learning and scientific researching capabilities.

### **5.4 Amending teaching mode and teaching methods, cultivating students' innovative character**

Teachers ought to break the single-mode of class teaching who can combine intensive teaching, cooperative studying and single coach. In addition, they must promote student learning and cooperating actively, to develop team awareness and cooperative ability. Teaching methods have features of enlightening and researching. Universities should emphasize the demands of economic and social development as well as the latest results of interdisciplinary research. Then, teachers should constantly update course content, introducing new knowledge and new theories. Students are encouraged to find problems, question boldly and explore new ways to analyze and solve problems.

## **6 Conclusion**

To cultivate the tip-top innovative talents in various fields becomes an important way of realizing the economic and technological development and enhancing the comprehensive national strength in current world of every country. We should to supply outstanding innovative talents having both ability and integrity for our innovation-oriented country.

### **Acknowledgement:**

A Project funded by Jiangsu philosophy and society science fund (14SZB010).  
Research Base emphases fund Projects of Jiangsu Education Science "The Twelfth Five" planning (B-a/2013/01/012);  
Research Project of Nanjing University of Finance and Economics (Y2012008);  
Education research project of Nanjing University of Finance and Economics (2013003).

## **References**

- [1]. A. Vine. Hand Book on Undereducated Curriculum [M]. San Francisco: Jossey Bass. 1988
- [2]. Harvard Cornmittee. General Education Free Society [M]. Cambridge: Harvard University Press. 2005, 6
- [3]. Bruce M Shor. Research as a Model for University Teaching [J]. Higher Education. 2006 (19): 27
- [4]. Peter Scott. Higher Education Re-formed London [M]. New York: Flamer Press. 2000