# Research and Enlightenment on Mechanism of Universities' Entrepreneurship from the Perspective of Entrepreneurial University

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## Abstract

It is an inevitable requirement for college students to develop education according to their own characteristics, and it is also an inevitable trend to follow and lead the national economic and social development. Education has a long history and high level of entrepreneurship in American colleges and universities. It has a mature model and successful experience in education cultivation of entrepreneurial talents. By focusing on the Entrepreneurship in the Universities between China and the United States, analysis its entrepreneurship system so as to provide enlightenment for China's universities entrepreneurship development.

## Keywords

Entrepreneurship; entrepreneurship education; entrepreneurial university; Chinese and American universities.

## 1. Introduction

Although China is a populous country, it faces the embarrassing situation of lack of entrepreneurship. The Global Entrepreneurship Watch (GEM2010) China Report shows that the entrepreneurial activity of highly educated entrepreneurs in China (referring to those with college degree or above) ranks the 22nd among the 60 participants in the Global Entrepreneurship Watch, with a low China's Global Ranking in Comparison of Overall Entrepreneurship.

This shows that China still faces the challenge of lack of entrepreneurship talents, which in turn restricts China's rapid rise. In view of the situation of our country's personnel, we have compared some of the entrepreneurship in the universities between China and the United States and hope to find ways to improve this situation.

## 2. Analyze Entrepreneurship: the Perspective of Entrepreneurial University Element

The rise of entrepreneurial universities is an important model for the development of research-based universities in the last 20 years [1]. Mr Ezkowitz, who first proposed "entrepreneurial universities", argues that "universities and their constituents often benefit from government incentives. By using their mastery of the knowledge acquisition more wealth growing interest, the interest and desire and accelerate played down the line between academic institutions and companies, and this kind of organization's interest in knowledge is always closely connected with economic application value and returns " [2].Under Triple Helix Theory, it shows the enterprises and the government's ability to some

university, continue to maintain the original role and identity, three closely the innovative elements of circulation, encourage the growth of sustainable innovation entrepreneurship (Fig.1)[3].

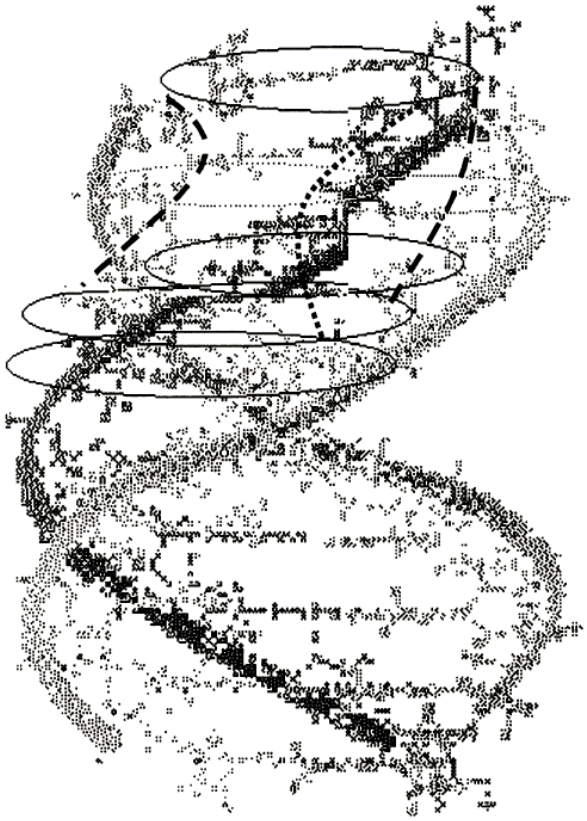

Fig.1. The Triple Helix Model of University-Industry-Government Relations.

Throughout today's successful entrepreneurial university, it is also an institution with outstanding performance in entrepreneurship. That is, entrepreneurial university provides an ideal ecological environment for the implementation of entrepreneurship. Therefore, it is necessary to differentiate and analyze the interaction between entrepreneurial universities and entrepreneurship, and systematically evaluate the development model of entrepreneurship in entrepreneurial universities.

Entrepreneurial university is a classical theory of five elements of Clark's entrepreneurial university model, namely, diversified funding base, strong control core, widen the development of the periphery, the heart of the activation and integration of entrepreneurial culture, entrepreneurial culture including the teachers and students in the aggregates innovative and entrepreneurial spirit [4].

An innovation theory of entrepreneurial universities is the comprehensive evaluation and development guide of entrepreneurial universities based on the seven elements and 41 observation indicators proposed by the EU and OECD [5].From the perspective of education, in this framework, "entrepreneurial perspectives in teaching" and Thirteen sub-items of "entrepreneurial development path" evaluate the core of curriculum teaching and talent training in education system of university entrepreneurship. Heart mechanism, "Study achievements transformation" and "internationalization" and "social influence" constitutes the running environment of entrepreneurship, and "leadership and governance structure" and "the organization's human and financial resources" constitutes the supporting structure of entrepreneurship.

## 3. Origin and Experience of Entrepreneurship in American Universities

In the 1930s, Dean Terman, Dean of Engineering Department at Stanford University in the United States proposed the concept and practice of cooperation between industry and business. He invested more than $500 in his own students and encouraged him to run Hewlett-Packard. This is considered the world's first angel investment/venture capital [6]. Hewlett-Packard's success, so that the first

university internal science and Technology Industrial Park Stanford successfully established, causing countries have to follow suit, thus creating a paradigm for cooperation in production, became the birthplace of entrepreneurship. The United States is an early education start-up school in the country, from primary school, junior high school, universities and even graduate students, are generally open employment and entrepreneurship courses. For the past 25 years, entrepreneurship has emerged as one of the fastest-growing disciplines in business schools and engineering schools in the United States.

In 1977, 50 to 70 colleges and universities offered start-up-related courses. In 1980, 163 institutions offered entrepreneurship courses. In 1984, the number of schools offering entrepreneurship courses had risen to 260. In 1997, about 400 business schools offered entrepreneurship courses and 125 business schools set up systematic entrepreneurial teaching programs. In 1999, some 1,100 colleges and universities offered courses in this area, many of which colleges and universities also have programs in entrepreneurship. In 1999, the United States National Venture Fund was established.

American university innovation and entrepreneurship training with focus on entrepreneurship and radiation-based entrepreneurship are two basic organizational models. Focused training in business schools and management institutes to train specialized entrepreneurship, such as MBA classes at Harvard Business School, have strict requirements for students; radiation training is carried out in the school-wide range, mainly to cultivate students' entrepreneurship spirit and entrepreneurial awareness, lay a foundation for students to engage in a variety of occupations. American entrepreneurship even extends to secondary education. A random sample of high school students across the country shows that 70% of students want to own their own business. 6% of students want to know more about entrepreneurship.

Harvard University, Stanford University, Massachusetts institute of technology, and the University of California have been among the top universities in the United States in entrepreneurship. The Massachusetts Institute of Technology (abbreviated as MIT) was the first American universities to implement entrepreneurship ecosystem in colleges and universities, is the entrepreneurial model demonstration at the university of entrepreneurial universities, radiation and other colleges and universities across the country.

The University of California, Los Angeles, launched the venture in March 2011.The industrial ecosystem functions effectively. Entrepreneurial start-ups in the ecological system at the MIT and research center, faculty and staff of the school is responsible for running, they have a clear division of responsibilities, a strong sense of responsibility, entrepreneurship ecosystem courses within the school and the teachers, also is arranged by the school education department unified coordination, to ensure that the check in place.

In the University of California, Los Angeles, entrepreneurial ecosystem is the vice President, who is directly responsible for the competent business, at the same time by the research and innovation committee, technology transfer center, knowledge sovereign and industry sponsored research and office management office, to ensure that the startup of the ecological balance of the ecosystem. Business advisory council, in particular, are the competent business vice President and Los Angeles, dean of the secondary composition, these institutions involved in entrepreneurial ecosystem, the purpose is to provide entrepreneurs with theory research and entrepreneurship and entrepreneurial practice guidance, in order to realize the incubation listing of new enterprises.

The development status of major ecological factors in the system [7].The teacher ecology factor has solid experience in entrepreneurship. The quality of teachers in ecological factors is the key to the success or failure of education. On the one hand, American colleges and universities encourage teachers to take the initiative to establish companies in the community on the premise of retaining the position of university teachers, and accumulate entrepreneurial experience through practice.

On the other hand, famous entrepreneurs of successful community entrepreneurship are employed as part-time teachers of education, providing new cases and innovative thinking for college students to start their own businesses. Every year, Stanford invites Intel's current chairman to offer two related professional courses to students. The center for entrepreneurship and technology at the University of

California, Berkeley, invites prominent people from the global technology, business and economic fields to give lectures to students every year [8].

The University of California, Los Angeles, employs the CEO or entrepreneur of a partner company as the mentor of the student entrepreneurship group, and each mentor arranges the entrepreneurship group to enter with well-known local entrepreneurs. Conduct face-to-face communication to better guide students to start their own businesses [9].

All sectors of society provide financial support. Capital is the basic guarantee for the normal operation of the entrepreneurial ecosystem. Education has long been supported and funded by businesses from all walks of life in the United States. Technology provides the MIT community to school demand information and financial support, some organizations also provide part of the campus entrepreneurial bonuses, risk appetite is active part of the community to join. Harvard business school's entrepreneurship center, which was founded with a $25 million grant from its alumnus arthur rock, now averages 389 for all entrepreneurial centers in the United States.

The kauffman foundation's entrepreneurial internship program at colleges and universities in the United States provides more than $1.2 million in internship funding to 26 colleges and universities to foster entrepreneurship among young people. American universities provide a reasonable balance of the entrepreneurial ecosystem through donations or grants from alumni Funds.

American colleges and universities have student societies that are interested in starting a business. College student societies play an important role in the entrepreneurial ecosystem of American universities. By carrying out various activities, student societies not only form good entrepreneurial resources and entrepreneurial network, but also generate new entrepreneurial strategies.

There are 10 student societies related to entrepreneurship on the campus of MIT, among which the most famous is the entrepreneurship club and MIT 100,000 dollar entrepreneurship competition [7].The association of entrepreneurs at UCLA's Anderson school of business is a forum for entrepreneurs to develop their skills, and it offers a strong alumni network and advice to entrepreneurs. The association organizes at least 150 related activities every year and also provides students with the opportunity to enter Los Angeles enterprises for entrepreneurial internship [8].

## 4. Disadvantages in Chinese Universities' Mechanism of Entrepreneurship

In China, entrepreneurship is a new phenomenon in universities. Universities, governments, enterprises and the community have not yet formed a joint force. There is a disconnection between the flow mechanisms. Therefore, the existence of undergraduates can't find work, businesses can't find talents, colleges and universities can't find the feeling of the phenomenon.

American society generally believes that entrepreneurship is a kind of spirit and consciousness, not only has value recognition, It will also be run through the actions to encourage schools and teachers to start their own businesses. From the Sino-US college students start-up ratio can be seen between the two different western developed countries.

The proportion of college students starting their own businesses up to 20%, while in our country this figure is less than 1%, reflecting a huge gap in entrepreneurial awareness. Secondly, in the entrepreneurship competition in developed countries, excellent student entrepreneurs often choose high-tech projects directly for the purpose of successful entrepreneurship. In the fourth "Challenge Cup" China college student competition, they tend to use low-tech service-oriented projects. According to a survey conducted by Xiamen University, 52.8% of the participants declared their intention to participate in the competition in order to increase their work experience and get to know the business elites. This undoubtedly shows that Chinese university students are not motivated enough to participate in the entrepreneurship competition.

Therefore, our country must strengthen the cultivation of the spirit and consciousness of innovation and entrepreneurship. It is necessary to improve the coverage of the population, promote the motivation of starting a business and upgrade the level of entrepreneurship. Multi-party Cooperation and Resource Integration The United States, through the cooperation of various agencies such as

schools, enterprises and the government, can enter schools and teachers can become entrepreneurs and realize the integration of talents and other resources so as to achieve unity between knowledge and practice.

In a survey of college students' undertaking by CCTV, one question was "Yourself."Where is the biggest difficulty in business? The answer is: A, lack of start-up funds 59%;B, Lack of professional experience 26%;C, lacks government policy support 2%;D, lack of relatives and friends approved 2%;E, Lacks connections 11%.This shows that, in addition to funding, entrepreneurship is the most crucial professional experience and personal connections. And this should be solved by a professional entrepreneur mentor mechanism. In the United States, entrepreneurial mentors are often the combination of academics and war factions [9].

Rich entrepreneurial experience has a certain academic background, is part-time teachers, entrepreneurs, successful entrepreneurs, technical innovation experts. Andrew S. Gove, former chief executive officer and current chairman of Intel Corporation, has been a part-time lecturer at Stanford Business School since 1991. In China, start-up mentors originated from teachers who had assumed employment guidance. They generally lack entrepreneurial experience, and most of them are pure-Division, lack of actual combat experience. Therefore, our country must strengthen the multi-party linkage of schools, governments and enterprises, and invite front-line personnel of enterprises to attend classes so as to really help the purpose of the entrepreneur.

## 5. Entrepreneurship Synergies: Flat Vs Vertical

Thomas Friedman, the columnist for the New York Times in the United States, wrote a book entitled "The World Is flat "classifying globalization into three stages:" The 1.0 era of globalization "took place between 1492 and 1800, with the main driving force being the state and the government; the" Globalization 2.0 era " lasted from 1800 to 2000, The main driving force for multinational corporations; 2000 entered the "era of globalization 3.0", the main driving force at this stage is the Internet and talents. This statement reflects that globalization has moved from a new phase of trade flow and capital flow to the flow of talent [10].

“Entrepreneurs can enter universities and teachers can become entrepreneurs”. The United States, through the cooperation of various agencies such as universities, enterprises and the government, can realize the integration of talents and other resources so as to achieve unity between knowledge and practice. In the United States, the entrepreneurial mentor is often a combination of academics and actual combat, both rich entrepreneurial experience and a certain academic background, but also part-time teachers, entrepreneurs, successful entrepreneurs, technical innovation experts.

In China, start-up instructors originate from teachers who have assumed employment guidance. They generally lack entrepreneurial experience. Most of them are full-time teachers, lacking actual combat experience. Therefore, China must strengthen the multi-party linkage of schools, governments and enterprises, and invite front-line personnel of universities to attend classes so as to really help the purpose of the entrepreneur.

In the United States, through the angel investment and venture capital system, entrepreneurial seeds are given opportunities to hatch, either fail in the market or emerge rapidly. In China, in order to encourage university students to start their own businesses, the state has promulgated a series of preferential policies and various policies have been introduced across the country. However, the implementation of these policies is not satisfactory, especially on such key issues as business areas, financing channels and preferential tax treatments.

## Acknowledgments

The research is supported by grants from the National Social Science Fund of China awarded to the first author. Project number is 14CGL073.

## References

[1] Kong G, Wang S. The rise and transformation of entrepreneurial universities [M]. Social Science Literature Press, 2015.
[2] Etzkowitz H, Redsddorf L. University and global knowledge economy [M]. Jiangxi Education Press, 1999.
[3] Yu X, liu Y. Exploration and practice of education model of innovation and entrepreneurship in research universities based on the triple helix [J]. Research on Education of Tsinghua University, 2016, 37(5):111-115.
[4] Zhang C, Zhong Z. Research on entrepreneurial education from the perspective of entrepreneurial university -- comparison of entrepreneurial education between tsinghua university and national university of Singapore [J]. Research on Education of Tsinghua University, 2017, 38(3):91-97.
[5] The EU - the OECD. A Guiding Framework for Entrepreneurial Universities, http://www.The oecd.Org/site/cfecpr/guidingframework.HTM, 2016-05-17.
[6] Mei W. Entrepreneurship in Chinese universities. Hangzhou: Zhejiang Education Press, 2010.
[7] Yin C, Gong X.Research on the construction of entrepreneurial ecosystem in UCLA [J]. Exploring Higher Education, 2012, (5) : 69-70.
[8] Liu L, etc. A preliminary study on the entrepreneurial ecosystem of entrepreneurial universities [J].Higher Education Study, 2009, (3) : 21- 22.
[9] What Can Do For Your [EB/OL].HTTP:// www.Entrepreneurassocianti - on.Net /, 2012-03-25.
[10] Etzkowitz H, Leydesdorff L. The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations[J]. Research Policy, 2000, 29(2):109-123.