

Discipline Construction in China: Seeking Breakthrough in Contrast with Singapore

Nan XING^{1,a,*}, Yuan-Mei XU^{2,b}

¹YaTai School of Business and Administration, JiLin University of Finance and Economics,
Changchun, JiLin, China

²Dunhua, Jilin Province, China

^a12126766@qq.com, ^b2528077235@qq.com

* Corresponding author

Keywords: China, Singapore, Discipline Construction, Comparison.

Abstract. This study compares the education system of Singapore with China. The study examines the Singapore's educational system and Discipline Construction experience like executing "holistic" training objectives, creating excellent scientific research team and scientific platform, promote vigorously the internationalization strategy and continue to improve the stakeholder evaluation system. Based on the present Singapore's foundation and conditions, China discipline construction should make clear the school's own academic advantages, and recognize the gaps and deficiencies that exist between the subject status and educational goals. It should also promote the transfer of knowledge and creative ideas. In addition, it should encourage the sharing of organizational culture, innovation and communication.

The Development of Academic Education in Singapore

In 1963, Singapore became a state of the Federation of Malaysia but on August 9, 1965, when Singapore's Prime Minister, Lee Kuan Yew, announced the separation of Singapore from Malaysia. Covering an area of only 214 square miles, and 2 million people, Singapore has little natural resources. There is no drinking water, and survival is the biggest problem facing Singapore. However, in just over five decades, Singapore has become an economic and an educational powerhouse. Of the six existing universities, two are ranked among the top 15 in the 2016 QS World University Rankings. For instance, Nanyang Technological University (NTU) founded in 1991, and in 2016 QS ranked second in Asia, and ranked first in the QS Top 50 Under 50. Needless to say Singapore's academic development is at the forefront of the world in a short time.

The four phases of the Singapore education development process entered the capacity-oriented phase in 1997, emphasizing that students are the center of learning, proposing "teach less and learn more"; implementing lifelong learning programs; developing diversified education and high-level university education. Currently, Singapore focuses on value-oriented and student-oriented and the development of whole-person education. The development of higher education discipline construction focuses on four functions: personnel training, scientific research, social services and cultural heritage innovation. Discipline construction is a very large system. I believe the core element is human. The fundamental purpose of discipline construction is to train high-level talents; including teachers and students so as to improve the quality of teaching and scientific research. This will also produce the high quality of scientific research as the basic value orientation. Based on this core element and value orientation, Singapore is developing the subject of "Holistic" through practical implementation of problem-oriented disciplines, and cultivate self-confidence, self-learning, positive contributors and responsible citizens; through the cultivation of research teams and high scientific research input to build a research platform; and through the internationalization of the strategy to promote the convergence of disciplines through a sound stakeholder evaluation system.

Discipline Construction in Contrast China with Singapore

Effective Implementation of "Holistic" Training Objectives

In 2016, the Ministry of Education optimizes the mechanism of personnel training in colleges and universities. China's undergraduate education has a wide caliber of professional education. Over the years China has focused on the transferable skills, emphasizing the cultivation of application-type compound talents. There is an emphasis on student achievement, more than students learning, as well as, the quality of character development. Singapore's education and training objectives pay more attention to student's character, quality, and confidence. Also, adaptability, self-awareness, independence, and a keen sense of self, along with critical thinking and effective communication skills.

I think Singapore, with a strong citizen consciousness, is trying to make life better and play a positive role in the people. In Singapore's education, a person with self-learning ability is responsible for their own learning; continuously put forward problems, repeatedly thinking and perseverance; A positive contributor to collaborate effectively with team, positive, dare to challenge, have innovation spirit, and show excellence; a responsible citizen.

In 2004, Singaporean Prime Minister Lee Hsien Loong proposed the concept of "teach less learn more" at the National Day Conference. The essence of the program is to emphasize student-centeredness, teachers as mentors and facilitators. "Teach less" is not to teach less or reduce the teacher's teaching investment, but to improve the difficulty of teaching. In addition, requiring teachers to the teaching content from the accumulation of quality improvement, and encourage schools and teachers to adopt appropriate teaching methods; this will help students turn from passive recipients to active learners.

Teach less learns more is known as the PETALS framework; this framework includes five dimensions: Pedagogy, Experience of Learning, Tone of the Environment, and Assessment and Learning Content. This framework helps to improve student learning. The Petals framework is to promote the use of flexible and effective teaching methods to motivate and guide students to take the initiative to explore the different experience; to create an open and equal learning atmosphere; regular assessment of learning outcomes; continuous improvement of teaching and learning process; design real, meaningful learning content, and stimulate students' interest in learning.

The National University of Singapore (NUS), for example, offers students a range of value-added courses with career, language and culture, hobbies, and gain knowledge. At the same time it pays attention to practical experience as one of all college courses. Factory introduced teaching practice study, in the form of the actual plant environment to be brought into the teaching environment, provide students with a perfect and effective learning environment and process. The plant environment ensures that courses and business need to be linked to promoting close ties between colleges and enterprises.

Focus on Creating Outstanding Research Team

On 24th November 2016, the China Center for Scientific Evaluation and Evaluation jointly issued the "Ranking of the Overall Rank of World-Class Discipline Construction". The evaluation of teachers' scientific research ability is proportionately much higher than the teaching ability of the teachers' achievements in scientific research and contribution to social services assessment system.

Singapore builds a good research team in three main ways: 1) by setting up jobs, assistant professor, research scholarship construction high quality teaching and research team (2) strict peer review, cultivating talents, international research from nation and abroad to the south more than 65% of the teaching staff in 70 countries. (3) strict recruitment, assessment, promotion system.

Nanyang Technological University's teacher appraisal and evaluation system consists of three parts, scientific research, teaching, and social service. Social service include both social and university services. During the teacher evaluation phase, the director meets with each employee for 30 minutes to summarize the results of the previous year and formulate the work plan for the next year. The president and the teacher make appropriate suggestions and mutual discussions, such as, the number of articles each teacher publishes in the field of scientific research, and social services.

The contents written by the Director concluded that the two sides reach an agreement, and teachers' signature based on this standard assessment of teachers.

Scientific Research Platform to Build Excellence

In the 2013, China's scientific research input of the world is in the second. But the proportion of Gross Domestic Product and the number of researchers is far behind the United States, Japan, Australia, and Singapore.

Singapore has attracted, recruited, and supported young scientists through such centers as the Center for Excellence in Research and the National Research Foundation. Since 2005, the number of research funds has risen by about 400%. The Government of Singapore has launched a competitive research program, and research institutions to actively apply for a single project amount of up to 150 million Singapore dollars.

Nanyang Technological University has taken the initiative to break through the boundaries of its own hospital and departments and actively carry out academic exchanges and scientific research cooperation in different disciplines, especially in the field of interdisciplinary research. It is necessary to build a comprehensive, interdisciplinary, Medical exchange integration of the academic atmosphere. While strengthening cooperation with enterprises, collaboration to solve existing problems, enterprises and universities set up joint laboratories, sharing the commercialization of scientific and technological achievements.

Vigorously Promote the Internationalization Strategy

On November 30, 2016, the University of Southwest Jiaotong University Internationalization Evaluation Research Center released the "University Internationalization Ranking (URI-2016)" report. The report shows that the characteristics of the internationalization of China's universities: that is, the development of internationalization of China's universities shows a strong staircase state. The level of internationalization is still very low, the concept of planning internationalization has been done, however, the internationalization of education, international content, and means of the international level is still very low.

Singapore's internationalization of higher education is very strong, in 2016 QS World University, comprehensive ranking, the National University of Singapore and Nanyang Technological University ranked No. 12 and 13 in the world. Peking University ranked first in the internationalization of China is far lower than the National University of Singapore and Nanyang Technological University.

Local universities in Singapore, with the support of the Government, are committed to internationalizing their educational strategies by taking advantage of Singapore's geographical advantages and national strengths to solve their own development problems. National University of Singapore will be the key to the development of the school, closely integrated in the University's development goals and overall strategy through overseas immersion courses, teacher internship, exchange students, strategic cooperation to complete the "internationalization factor input", Students and teachers use curriculum to internationalize the output elements, and improve the local university of Singapore disciplines. For instance, in Nanyang Technological University there are more than 250 world-renowned university exchange program, with foreign exchange experience of undergraduate students has reached 50%. This figure is projected to reach 80% by 2020.

Continue to Improve the Stakeholder Evaluation System

China's discipline evaluation system has been continuously improved. In the fourth round of the national academic evaluation conducted in 2016, the assessment framework has continued to maintain the "teachers and resources", "quality of personnel training", "scientific research level" and "discipline reputation" four first-level indicator framework unchanged. But compared with the past has also been a new change, such as the quality of personnel training for the indicators, the current round of disciplinary assessment to establish a "training process quality", "quality of students" and "quality of graduates" three-dimensional evaluation model, all-round evaluation of the quality of personnel training. The "Social Service and Discipline Reputation" emphasizes the special

contribution of the subject, and it is divided into "Social Service Contribution" and "Academic Reputation", which reflects discipline's importance of the social service function, contribution and social influence.

However, compared with the subject assessment system in Singapore, the assessment object is widely different. In the subject evaluation system of Singapore, in addition to, scientific research, teaching, social, business and academic contribution to society is also an important evaluation index.

Every five years, the University of Singapore investigates and accepts the external review panel comprising the ministry of education officials, unified management, the board of directors, employee and student representatives, employer representatives, industry and commerce departments and research institutes. Much emphasis was placed on industry and commerce with the employer representatives from society.

Conclusion

Throughout the course of Singapore's disciplinary development, it is difficult to find a fixed development model. Under the present foundation and conditions, the disciplinary construction should make clear the school's own academic advantages, and recognize the gaps and deficiencies that existed between the subject status and educational goals. Through the rational planning and direction of selection, to increase the focus of the key disciplines to invest; making it the key to the development of school discipline and a breakthrough; "do not" stage contraction until the environmental conditions change, or to support the "not" into the "promising" disciplines, to build a reasonable discipline system.

Teachers have the implicit knowledge. How to maximize the potential of teachers, and to promote the transfer of knowledge and creation, is an important basis for discipline construction. Teachers can have a successful transfer of knowledge and the creation of teaching plans, monographs, and papers, consistent with the discipline construction objectives of the scientific evaluation system. The evaluation system includes evaluation of teachers and students, evaluation of specialties and departments, evaluation of relevant functional departments and schools as a whole. The evaluation system will play the important role of the baton, guiding the schools, faculties, teachers, reasonable internal and external resource allocation.

In addition, universities should share the organizational culture, innovation and communication. Only then teachers can better play a role in talent training, scientific research, social service and the function of cultural inheritance.

Discipline construction not only is self-development and self-cycle, but also should be more open, like open to social and economic development, national and international needs, open to other disciplines, open to the community, and the formation of discipline construction. This is to promote the scientific research cooperation, exchange teaching methods, construct scientific research platform, train students, and form a virtuous circle interactive development.

References

- [1] Roman. Singapore education left us thinking [J]. *Journal of Liaoning Education*, 2014 (16).
- [2] Edward Chou. "Teach less learn more" classroom idea [J]. *Journal of Education: weekly*, 2015 (52).
- [3] Zaghoul, Morsy, Philip G. Altbach, ed., *Higher Education in an International Perspective: Critical Issues*, Garland Publishing, Inc, 1996.
- [4] Hu Guosheng. Introduction to Nanyang Institute of Technology "people-oriented" spirit of education [J]. *Journal of Vocational Education Research*. 2014 (8).