

A Comparative Study of General Education Between China's and Singapore's Universities

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Abstract: Along with the development of knowledge-based economy, interdisciplinary talents have received widespread attention. While teaching students professional knowledge, universities also focus on general education. By studying the education objectives and curriculum of China and Singapore, this paper makes a comparative analysis of the similarities and differences between UESTC and NTU in terms of general education objectives and curriculum design, so as to provide certain references for universities, especially science and engineering universities, and to further improve general education.

Keywords: General education; Education Objective; Curriculum System

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1 Introduction

Since the 21st century, general education has been an international topic accepted by universities all over the world. General education is a kind of non-professional education, which is relative to professional education. The main purpose of general education is to cultivate well-rounded people and lay a foundation for the all-round development of students. The curriculum system of general education is the carrier of general education. Through the comparative study of Chinese and foreign general education systems, China's general education is to establish a scientific general education curriculum system, and finally achieve its purpose.

The paper adopts comparative analysis and case study method to carry out the research. Through the analysis and comparison of the education objectives and curriculum of Chinese and Singapore's universities, the study largely clarifies the similarities and differences of general education between China's and Singapore's universities. Besides, the paper selects University of Electronic Science and Technology of China (UESTC) and Nanyang Technological University (NTU) to discuss. Belonging to the research university of science and engineering, the two universities implement general education well and develop a relatively integrated curriculum of general education.

2 An Overview of the Concept and Practice of General Education

2.1 The Formation and Development of General Education Thought

General education originates from the thought of liberal education put forward by the ancient Greek philosopher Aristotle. In 1909, Abbott Lawrence Lowell, the President of Harvard University, made the first distinction between general education and liberal education. In his opinion, the traditional liberal education runs through the whole process of undergraduate education, while the general education mainly serves as the knowledge preparation in the early stage of specialization.

In the 19th century, Professor A.S. Packard of Bowdoin College was the first to combine general education with higher education, and the first to define it in the modern sense. Based on the situation of his school, he believed that it was necessary to provide students with basic knowledge of various disciplines

as much as possible, so as to lay a solid foundation for their future professional study. In this way, students could have a further understanding of their major before starting their professional study. This is the scholars' initial interpretation of general education.

2.2 The Practice of General Education

General education is not simply a concept, but a mode of talent cultivation. Its main goal is to cultivate "complete people" with broad vision, beautiful emotion and liberal spirit, instead of being limited to specialized talents in a single field.

In different times, countries and regions, general education has various contents and modes in practice. At the beginning of the 20th century, general education was widely carried out in the United States, after which it went through several reform movements. After world War II, Japan followed the mode of American universities to establish the "new system of universities" and began to implement the general education, thus starting to explore general education. In the early 20th century, general education, as an educational philosophy and mode of personnel training, was introduced into China and had a practical impact. The general education in domestic universities is an extension and expansion based on the comprehensive implementation of cultural quality education, which seems to be seeking for a breakthrough in quality education. It is not introduced into the undergraduate talent training program until the early 21st century. Curriculum is the core part of university education and reflects the educational concept and talent view. Therefore, if general education is to advance, curriculum setting and management will be the key points.

3 A Comparison of General Education Curriculum System between China and Singapore

China and Singapore have different national conditions, social systems and modern university governance structures. There are similarities and differences between China and Singapore in curriculum systems of general education. The following is a comparison of general education curriculum system between China and Singapore.

3.1 A Comparison on Education Objective

The objective of general education is a combination of curriculum mode and educational thoughts, which runs

through the whole process of university education.

In terms of differences of general education objectives, the objective of general education in Chinese universities is to cultivate people who are actively involved in social life, have a sense of social responsibility and are well-rounded citizens of the country. However, from the actual situation, the existing goal more emphasizes on the cultivation of comprehensive quality led by political quality and ignore the cultivation of the most basic civic quality. While Singapore's universities pay attention to develop whole-person education. Singapore especially emphasizes on values education, mainly involving nation first, community first; family as root and community as base; care and support, individual respect; racial harmony and religious tolerance.^[1]

Although there are different types of universities, universities have commonalities in their objectives of general education. 1) Reflecting the "people-oriented" educational concept; 2) Emphasizing the cultivation of students with "broad knowledge, solid foundation, high quality and innovation ability, and becoming national high-level construction talents; 3) Attaching importance to cultural quality education.

3.2 A Comparison on Education Curriculum

From the curriculum credit system, Chinese universities have learned from the general education experience of American universities. General education courses in the whole curriculum are relatively balanced, generally accounting for 40%-50% of the total courses. The proportion in total credits reflects the importance that universities attach to general education. The proportion of general education courses in Chinese universities is 38%-49%.^[2] The proportion is also roughly within this range in Singapore.

From the curriculum structure, in Chinese universities, the curriculum of general education includes compulsory courses and elective courses of cultural quality education. Compulsory courses are generally required and assessed uniformly throughout university, with some differences between liberal arts and science students at most. Elective courses for cultural quality education are open to all students, and optional or restrictive elective courses are adopted. Public compulsory courses account for about 70% of the total courses, and humanistic quality education courses account for 30%. The Singapore general education mainly forms three education curriculum modes: core curriculum mode, distribution requirements+free

electives mode and interdisciplinary course mode^[3].

From the curriculum teaching form, there are teaching classes, expert reports, special lectures and experimental courses in domestic universities, but most of them adopt the form of traditional teaching classes, and a few of them adopt the form of classroom discussions^[4]. In Singapore universities, except for the above forms, there are also some international cooperation programs, such as international student exchange program, global education program, overseas internship program, global summer learning program, etc.

4 The Experience and Inspiration of General Education in China's and Singapore's Research University

According to the Classification of Higher Education Institutions, the basic connotation of research universities is "higher discipline comprehensiveness, wider doctoral discipline layout, stronger doctoral training ability and higher scientific research level"^[5]. This paper holds that the development of research universities is closely related to undergraduate education, that is, undergraduate teaching has a fundamental impact on research universities. Therefore, this paper selects UESTC and NTU to explore general education.

4.1 The General Education of Research University in China

4.1.1 The Concept and Goals of General Education in UESTC

First of all, the goal of implementing general education in UESTC is to cultivate students' ability of thinking, expression and leadership in organizing communication. As a result, students can obtain more insight, listen to different voices, look at things from multiple perspectives, and improve their adaptability.

Second, UESTC aims to continuously improve students' humanistic quality and "new four abilities" ability through strengthening general education, and to lay a good foundation for students' life style. For this purpose, UESTC has institutionalized the requirements of general education.

Third, UESTC carries out the undergraduate elite talents training program, focuses on the improvement of "leadership", and comprehensively promotes the general education with the "new four abilities" as the starting point, so that students can show their leading

temperament in all walks of life.

4.1.2 The Curriculum Design of General Education in UESTC

From the curriculum credit system, credits of general education courses increase from 6 to 13. Core courses of general education, seminar for freshmen, other general education courses such as high-quality MOOC, "classic 60" respectively account for 6, 1, 6 credits^[6].

From the curriculum structure, in UESTC, the curriculum of general education includes core courses of general education, seminar for freshmen, Chengdian Stage, high-quality MOOC, "classic 60" reading and quality education elective courses and other general education forms. The former two are compulsory courses, the latter are elective courses.

From the curriculum teaching form, UESTC's general education is based on classroom teaching, including compulsory public courses and elective courses, supplemented by the second class, lectures, club activities, social surveys, etc.

4.2 The General Education of Research University in Singapore

4.2.1 The Concept and Goals of General Education in NTU

As a research university, NTU is a famous institution of higher learning with high reputation in the world. The vision & mission of NTU is a great global university founded on science and technology, nurturing leaders through research and a broad education in diverse disciplines^[7]. The general education objective of NTU is "training liberal arts talents and achieving whole-person training".

4.2.2 The Curriculum Design of General Education in NTU

From the curriculum credit system, the total credits of undergraduate courses in NTU are 126. General education courses have 57 credits, accounting for 45% of the total credits. In general education courses, 12 credits for core courses, 15 credits for prescribed elective courses and 30 credits for unrestricted elective courses.

From the curriculum structure, the curriculum of general education in NTU is mainly composed of three aspects: Core, PE and UE. Among the courses, the core courses involve Communication Skills, Ethics, Sustainability, Enterprise and Innovation, Singapore

Studies. The unrestricted elective courses involve Business & Management, Liberal Arts, and Science, Technology & Society.

From the curriculum teaching form, most of general education courses are taught in large classes. The course is carried out by several teachers in sections, and each teacher is responsible for the teaching and assessment of that part of the course.

5 Conclusion

5.1 Summary and Reflection

Universities should clarify the objectives of general education. Building a multi-dimensional value orientation and integrating whole-person education with professional education.

Universities should optimize the curriculum mode of general education. In the curriculum design, science and engineering universities can strengthen the study of liberal arts courses, and comprehensive universities can strengthen the study of science and engineering courses.

Universities should improve the curriculum system of general education. The implementation of the curriculum system of general education should not weaken the professional training, but improve the professional education level with the help of general education, and promote the training quality on the basis of reducing the total credits required for graduation. Meanwhile, improving the management and evaluation system is the key to perfect the curriculum system of general education.

5.2 Prospects for the Development of General Education

With the development of world economy and culture, as well as the differences in the orientation and concept of running universities in different countries, general education has the characteristics related to the times and rich ideological and cultural connotation.

The author believes that university education should not be limited to professional education, but should focus on the long-term development of students. In particular, science and engineering research universities should not overemphasize the training of instrumental rationality and neglect the cultivation of humanistic quality and ethics in the cultivation of technical talents. The future general education should not regard students' future professional education as the main training task, but should also absorb the knowledge content of other disciplines, such as philosophy, sociology, ethics, literary classics and so on.

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