

The Co-operative Education Practicing in China

Abstract:

In 1985, under the guidance of national Ministry of Education, Shanghai University of Engineering Science, in collaboration with the University of Waterloo Canada, took the lead with the first cooperative education pilot, marking the start of co-operative education program in Chinese mainland. Now co-operative education, integrating real-world work experience into students' learning, is more and more popular among higher education institutions in mainland China with an expansion of different higher institutions and modal diversification.

However, we are facing big challenges in practice of cooperative education. Since China is a big country, the difference of regional economic development and human environment creates an imbalance development of cooperative education. Moreover, the rapid development of market economy with the adjustment of industrial structure and the popularization of higher education cause a big change of talents needed, and a further higher education reform has to be carried out.

This paper attempts to describe the development history, current situation, and further development of the cooperative education in mainland China. Firstly, with the collaboration of Shanghai University of Engineering Science and University of Waterloo Canada as an example, showing the way to introduce the successful experience from abroad combined with national conditions. Secondly, the main problems we are facing in current practice of cooperative education and probable reasons in conditions of a developing country. Thirdly, recommendations on further

implementation of cooperative education, especially the internationalization development in cooperation with institutions and companies abroad in terms of students exchange both for work placement and academic learning.

Key words: Co-operative Education, development history, current situation, recommendations

Co-operative education, or work integrated education, refers to the education pattern which “provides off-campus work experiences that engage students in solving authentic engineering problems that elucidate textbook problems seen in the classroom.” This pattern on the one hand provides the practical work experience for the students and brings out the most creative thinking of them, on the other hand, it produces graduates who have the skills sought by employers for the workforce. In 1985, Shanghai University of Engineering Science, cooperating with University of Waterloo in Canada, established the first pilot program of co-op education, which marked the beginning of the co-op education in China.

With more than 30 years’ development, based on the advanced experiences absorbing from the outside world and resting on China’s actual conditions, people who work for Chinese higher education create a co-op education pattern with Chinese characteristics.

1. The development history of Co-op education in China

The concept of co-op education was introduced in China in 1980s. It refers to a structured pattern of combining classroom-based education with practical work experience. Co-op education alternates semesters of on-campus study with semesters

of full-time employment. It helps young people to make the school-to-work transition, service learning, and experiential learning initiatives.

In 1985, Shanghai University of Engineering Science and University of Waterloo (Canada) started to adopt a new practice that can be described as “three semesters an academic year, and alternating semesters of on-campus study and full-time employment”, which was the start of the co-op education practice in China. In April 1994, China National Association of Cooperative Education was founded in Shanghai, which manifested the transition from a spontaneous and decentralized action to structured and organized community actions. China Higher Education Association along with scholars and researchers in the relevant field conducted a complete study of co-op education both in theory and in practice. During this period, co-op education in China developed dramatically and rapidly. The national Ministry of Education placed great importance on it and involved it into the higher education reform. In 1997, the national Ministry of Education published “Notice on carrying out the cooperative education pilot work in the year of 1996-2000”, which marked the end of the folk co-op education activities and the start of the structured pilot programs guided by the government.

Over the past twenty years, there has been a deep and comprehensive development in co-op education pattern. It has become a fundamental and crucial way to personnel training, especially in universities.

2. The current situation of Co-op education in China

The co-op education in China has been very flexible since its start. With the

carrying-out of China's economic reform and open policy, the co-op education experienced a rapid growth and showed the features of multi-levels, multi-forms and various types.

The typical co-op education modes in China are as following: “Alternation Mode”, “order – based cultivating mode”, “jointed-cultivating mode”, “the project-based mode” etc.. For instance, Shanghai University of Engineering Science with the form of three semesters an academic year is the typical pattern of “Cooperative education, studying and working alternation”; Zhejiang University, Tianjin University as the representative of "pre-employment, joint-cultivating mode"; Tsinghua University and Beijing Industrial University as the representative of the pilot reform to strengthen the production practice in Engineering education; universities and industry departments jointly founded the school form, such as the Harbin Institute of Technology and the First Automobile Factory co-founded the School of Automotive Engineering etc.; with enterprises as the main body, enterprises to participate fully in the process in the form of training, such as Shou Gang University.

The levels and types of the co-op education in China are also varied. There have been wide pilot co-op programs among colleges and university students in engineering, agronomy and medicine, and these programs always last much longer. Nowadays, colleges of Science and Literal Arts as well as comprehensive universities are taking the co-op education programs positively and most of them gained successful experience. The scope of the co-op education pilot programs is enlarged

and the programs continue to maintain a sound momentum of growth. Some of the programs have been a significant feature and character of the university.

3. The coop education practicing at SUES

In 1985 Shanghai University of Engineering Science first introduced the cooperative education program from the University of Waterloo, took the leader in the domestic implementation of the “three semesters an academic year, and alternating semesters of on-campus study and full-time employment” (see table 1.). In the past thirty years the school while studying practice, formed a unique cooperative education model “work integrated education, the alternation of on-campus study and full-time employment”. Its main features could be described as:

- the combination of learning and working;

On-campus studying semesters and full-time employment semester are alternated.

Usually the working semester is at the summer break for 6 weeks to 8 weeks.

- carefully planning;

The working semesters are carefully planned in a program’s curriculum. Total there are 6 credits for 3 working semesters. All the working semesters are carefully planned by the college, students and employers.

- fixed positions;

Students look for the positions in the society. And the university organizes Co-op Job Fair regularly every year to help students to find the jobs.

- process supervision;

In the working semester, the coordinators supervise and visit their students

regularly, and the employers direct and supervise students at their positions too to assure the quality control of working semester.

- comprehensive assessment;

At the end of the working semester, the comprehensive assessment will be made based on the assessment from employer, the assessment from coordinator and the student's report of his or her practicing. Based on student's performance the grade of the working semester is given.

- fixed remuneration;

In the working semester student can get paid by the employer or get the allowance from the enterprises. It depends from position to position, and company to company.

- time guaranteed.

Based on the curriculum each working semester should be at least over 6 weeks. Usually it should be 6-8 weeks, then student can get the credits at the end of working semester.

In its 3-semester (working semesters) of the curriculum, the detailed operation is:

- 3-stage of the working semester;
- 3-combination of its characteristics;
- 3-level and 3-group of its management system;
- 3-pillar system.

3-stage of the working semester consists of the stage of preparation,

implementation and summary.

3-combination of its characteristics reflects the main purposes of the co-op education. In the working semester student's work is combined with the teaching content on campus, with the future employment when they graduate, and with the innovation practice in their practicing.

“3-level” refers to the organizational structure of the decision-making level, the organization level, and the executive level. The decision-making level belongs to the level of university leaders. They are responsible for the establishment of Cooperative Education Leading Group. President is the leader of this group. The organization level refers to the working group of each college. And the executive level refers the co-op education faculties and coordinators in each college.

“3-group” is the organizational structure of the three transverse connecting offices, i.e. Academic Administration Office, Students' Affairs Division, and Cooperative Education Service Center. Academic Administration Office is responsible for the curriculum planning for each program; Students' Affairs Division organizes the students to carry out cooperative education with the help of each college; and Cooperative Education Service Center is in charge of the guidance, service and assessment for the cooperative education.

3-pillar system refers the organizational security system, the marketing system and quality assurance system to assure the quality control of the co-op education.

As for the team of cooperation education faculties and coordinators, the university adopted the mixed management pattern, formed a comprehensive

coordinator group, who are from Cooperative Education Service Center, college cooperative education working group and full-time teachers and inspector. In 2014, there are 631 teachers were involved in the cooperative education work. In the team 453 are teachers and coordinators, and the rest are from the co-op education administration team. In 2014, the university cooperative education teacher-student ratio reached 1:25.

In order to improve the efficiency of cooperative education, to enhance the ability of mastering the dynamic data analysis of cooperative education, the Co-op Education Information Management System (CEIMS) was constructed. In 2014, the CEIMS has been updated to relize the following function:

- online entry of students' cooperative education information;
- online review of the cooperative education students' position information;
- online management for the coordinator of cooperative education students;
- online collection and release of the employer recruitment information;
- online assessment of student's cooperative education;
- awards cooperative education students

Tab. 1 3 semesters an academic year

Freshman			Sophomore			Junior		
Sept.-Jan.	Feb.-June	July-Aug.	Sept.-Jan.	Feb.-June	July-Aug.	Sept.-Jan.	Feb.-June	July-Aug.
study	study	work	study	study	work	study	study	work

In 2014, total there are 9511 students from 13 colleges and 65 disciplines participated in the co-op education program, i.e. 65% of total on campus students.

Among these disciplines 8 of them are pilot majors of “Training plan of excellent engineers”, which is under the leadership of the national Ministry of Education, total 57 classes and 1908 undergraduates are involved. The scale of the co-op education programs grows steadily in the recent 5 years. (see figure 1.)

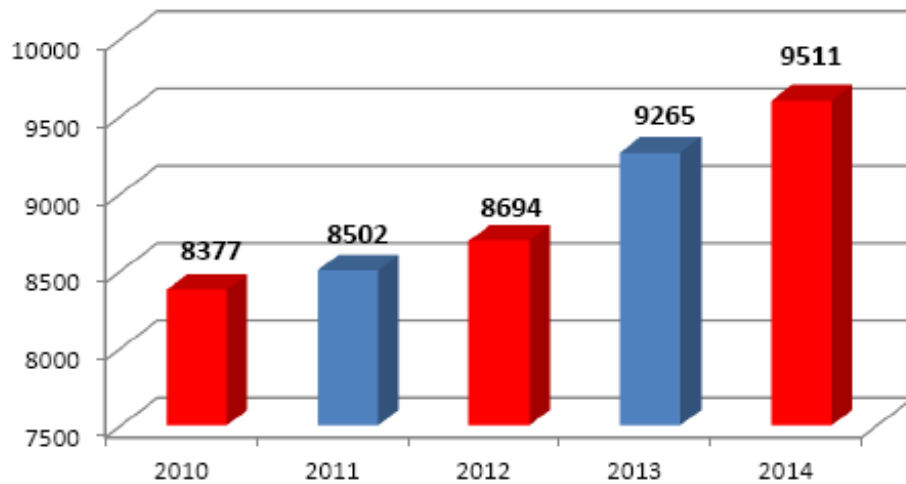


Fig. 1 Numbers of co-op students in the recent 5 years



fig. 2 Co-op employers both at home and abroad

In 2014, the number of the co-op education employers is 4553, covering Hongkong, Macao, and some developed countries like Britain and America as well as 30 provinces all over the Chinese mainland except Tibet. Another 119 new cooperative bases join the program, which increase the total cooperative bases to 779.

56 of them are in other provinces or cities. In 2014 Cooperative Education Job Fair 264 cooperative employers participated, up 22% over last year and total 3900 cooperative jobs were provided by them. Every year 70% of the total cooperative jobs were offered to the students by the university. (see figure 2.)

Shanghai University of Engineering Science is highly acclaimed for its wide attendance at the co-op education programs. In 2006, it was awarded the “Demonstrative Base of Chinese Cooperative Education” by China National Cooperative Education Society. And now it has been a model of co-op education practice in China.

4. Problems and suggestions for the Co-op education in China

After 30 years opening and reform, Chinese higher education has been changed substantially. Nowadays, the scale of Chinese higher education ranks first all over the world and its postgraduate enrollment ranks second. People who received higher education exceeded 70 million. In the meantime, the number of employees with a higher education ranks second in the world. Chinese higher education has achieved truly historic advances and has been an education and human resource power in the world. In 2014, there were 2452 universities in China with 2.486 million students, including 69.8 thousands of new entrants. Meanwhile the number of college graduates totaled 72.8 thousand. Being widely accepted by graduates and employers, co-op education programs have expanded and faced new challenges and difficulties.

3.1 The uneven development of coop education in different areas

China is a big country. It stretches across a vast area and the development level of

society, economy and culture varies significantly. The education idea, practice and development level of eastern China are quite different from those of western China, so are coastal areas and inland areas. For instance, affected by the level of economy, the co-op education practice in western and middle part of China is not effective. To chart a course for a long term development, appropriate pilots should be picked out so that we could accumulate experience effectively. Therefore, we must try to enact and perfect relevant laws and regulations as well as enhancing publicity to encourage activities of co-op education.

3.2 Lack of System Security for the Cooperative Employers

After 30 years reform and opening to the outside, China has been in the period of the society developing transition. The value of co-op education has not been recognized by most companies. Some of them attaches more importance to the economic results than the personnel training, which caused the inadequacy of the cooperative jobs. Therefore the formulation of the national 《Regulations on the Promotion of Cooperative Education》 should be promoted to provide the legal backing to the co-op education promotion. Especially in the reduction of corporate tax and other policies and regulations, the security system should be developed and established in line with the actual development of the operability of the specific provisions, to improve the enthusiasm and the protection of enterprises participating in the cooperative education.

3.3 Low Internationalization of Co-op Education in China

In the current world, the trend of global integration has been irreversible, which

leads a frequent labor flow all over the world. The promotion of international co-op education is of great importance to meet modern university students' demand for multi-culture, cross-culture communication and global outlook. At present, compared to University of Waterloo and other famous universities in the world, the internationalization of co-op education in China still has great space for improvement. Therefore, the students' awareness of participating the international co-op education programs should be enhanced to broaden their international outlook. With the aid of World Association of the Cooperative Education this wonderful platform, learn from the successful experience of advanced universities in the world, and establish linkages and share resources and common development with other colleges, counterparts and organizations all over the world. Meanwhile, we should positively expand the resources of co-op education, especially paid internships abroad. We should also explore the cooperation with famous enterprises or multinational firms to build more overseas co-op education bases so that we can raise the level of internationalization of our co-op education practice effectively.

5. Conclusion:

The Co-operative education has developed extensively, in-depth and sustained in the reform of higher education in China for 30 years, especially the cultivation of talents in colleges and universities. The Co-operative education has become a fundamental and crucial method, and formed the cooperative education mode with Chinese characteristics. However, in the rapid development of Chinese economic and social transformation stage, cooperative education is faced with new challenges and

new problems. Therefore, we must continue to learn the successful experience and practice from the advanced colleges in the world, establish and perfect the relevant national policies and regulations, and strive to create a cooperative education atmosphere, mobilize the enthusiasm of each side. Through the joint efforts of school and enterprise, cooperative education will continuously develop themselves, improve themselves and go beyond their own, achieve its further cooperation based on its cooperative fostering, education and employment. That is the new idea, new goal and new task of the future development of cooperative education in China.

Reference:

1. Alexander C. Yin, "Learning on The Job: Cooperative Education, Internships And Engineering Problem-Solving Skills", A Dissertation in Higher Education, 2009
2. Wang Hong, "Renovation and Innovation: Theory and Practice of Constructing Characteristic University", Press of Tsinghua University, 2013.
3. Wu Yan, "The New Idea, New Objective and New Target of the Development of Co-operative Education in China", Beijing Education (Higher Education), Jan.2010, No.519: 5-9.
4. Darrell S. Career, "Benefits of Cooperative Education and Internships: Perceptions of Graduates from a Rural Midwest Engineering and Science Institution" [D]. Vermillion: School of Education, University of South Dakota, 2008:149.
5. Li Bingan, "Introduction of the Co-op Education Mode at British Companies and

Using as References” [J], High Engineering Education Research, 2012 No.1:

58-63

6. Wang Zu-lin, “On the Distinctive Educational Value of Cooperative Education”,
Journal of Northeastern University (Social Science), Vol. 15, No. 6, Nov.2013:
630-635
7. Zhao Hanqiang, Guo Baolong, “Inspirations of Overseas Cooperative Education
of Production and Learning for China’s Implementation of the Plan of Cultivating
Excellent Engineers”, Higher Education of Science, 2010 N0.4: 49-52
8. Chen Jiefang, “The Co-operative Education Theory and Its Practicing in China”
[M], Press of Shanghai Jiao Tong University, 2006: 128