

VI. PROFESSIONAL EDUCATION AND TRAINING OF IWT IN CHINA*

1. An Overview of the Educational Administration System of China

Higher Education

There are 1080 universities and colleges of full-time higher education in China. They are administrated in three forms:

Firstly, the State Education Commission is in charge of the 35 of them, which are the most famous ones in the country, such as Beijing University, Nanjing University, etc.

Secondly, more than 60 ministries, commissions, bureaus and very big business groups pose administration upon about 350 universities and colleges. For instance, the Hohai University is directly under the Ministry of Water Conservancy, and Dalian Maritime University directly under the Ministry of Communications. The General Aviation Industry Corporation of China and China Ship-Building Corporation also manage a few universities. Of the 350, some are also the most well-known universities in China, such as Hohai University.

Thirdly, the other 700 or so belong to the provincial-level governments, including the five autonomous region governments and the three centrally-controlled municipal governments, i.e. Beijing, Shanghai and Tianjin.

Professional Secondary Schools (also called secondary vocational education)

These schools are managed either by the ministries of Central Government, local governments or the companies.

Secondary and Primary Schools

These schools are all managed by local governments. The term of primary schools is as long as 6 years; Secondary schools term last 6 years too:

- three for junior secondary school, and
- three for senior secondary school.

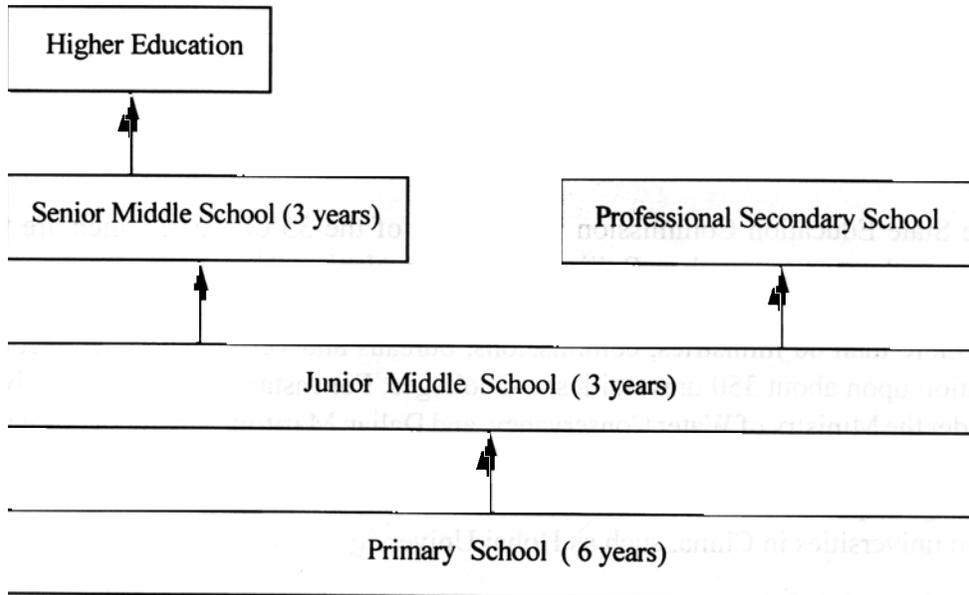
The 3 years of junior secondary school plus 6 years of primary school forms the 9 year compulsory education. Children have usually been above 15 when they finish this period.

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Adult Education (also called on-job education and training)

There are only a few individual campuses undertaking this kind of education and training. There are mostly programmed in universities and professional secondary schools. It is good to share the facility and faculty resources with full time education.

The figure below shows the structure of education system in China:



Degree Conferring Policy

Doctor degree conferring is usually by universities or research institutes, but these organizations have to be authorized by the Central Government. Master's degree conferring organizations have to be authorized by both the Central Government and some authorized provincial governments. The specialty of port and waterway engineering in this Hohai University is the only one in China to be authorized to confer the Doctor degree.

2. Classifications of Professional Education and Training in the Field of IWT in China

Classification of Levels

Higher Education

- Doctor's degree program with a term of 2--3 years. Students are selected mostly by universities and their tutors.
- Master's degree program with a term of 2--3 years. Students are selected firstly by passing strict nationwide examination, then by the universities and their tutors.

- Bachelor's degree program with a term of 4 years or longer. Students are selected by the strict nationwide Examination of Entrance to University and Colleges.
- No degree but with higher education diploma, usually with a term of 3 years or less. Students are selected by passing strict nationwide examination, with the score a little bit lower than that of Bachelor's degree program.

Secondary Education

Students of this level mostly come from junior middle schools through middle-level nationwide examination. Part of them of this the kind are professional secondary schools. Graduates from schools of this kind will be technicians and management personnel, or called white-collar workers. Another part of the kind are skilled worker training schools. Graduates from schools of this kind will be skilled workers, or called blue collar workers.

Classifications of Forms

The full time off-job education with diploma and degree or diploma without degree

The part time on-job education and training with / without diploma

This kind of education usually take place in full time school campuses, only a few special campuses are individual. The students or trainees are all adults. They are usually experienced persons or skilled workers.

Classifications of Majors

Engineering or construction of harbors or channels

Marine navigation in river, marine engineering and marine communications.

The kind of IWT business and business administration.

3. Location and Capacity of Professional Education and Training in the Field of IWT in China

Higher Education

Hohai University	Nanjing , Jiangsu
Tianjin University	Tianjin
Dalian University of Technology	Dalian, Liaoning

These are three world known universities, with celebrated experts, excellent faculty and good facilities.

Total capacity: 475 persons enrolled per year

Levels: Doctor
 Master
 Bachelor
 Major: port and waterway engineering.

Graduates from these universities will work in the field of river and sea. It is hard to separate them clearly.

Wuhan University of Communication Science and Technology (the WUCST)

Capacity: 600 persons enrolled per year
 Levels: Doctor
 Master
 Bachelor
 No degree with diploma in term of 3 years
 Major: Maritime engineering
 Maritime Navigation
 IWT management

***Chongqing Communications Institute, Chongqing, Sichuan
 Changsha Communications Institute, Changsha, Hunan
 Nanjing Communications College, Nanjing, Jiangsu***

Total capacity: 485 persons enrolled per year
 Levels: Master
 Bachelor
 No degree with diploma in term of 3 years
 Major: Port and waterway engineering including sea port and waterway but mostly for river.

Furthermore, there are Qingdao Ocean University, Qingdao, Shandong; Hangzhou University, Hangzhou, Zhejiang. They also have the major of port and waterway engineering with good faculty and facilities. But the amount of students there is relatively smaller than that of those mentioned above.

Secondary Education

Professional secondary schools

There are 6 schools (2 of in Jiangsu province). They are:

- Nanjing Navigation School, Nanjing, Jiangsu,
- Chongqing Navigation School, Chongqing, Sichuan,
- Harbin Navigation School, Harbin, Heilongjiang,
- Wuhan IWT Industrial School, Wuhan, Hubei,
- Wuxi IWT Construction School, Wuxi, Jiangsu and
- Guangxi Navigation School, Nanning, Guangxi.

Total capacity:	2500 persons enrolled per year
Term:	2.5 to 3 years
Major:	Maritime navigation Maritime engineering Maritime communications IWT ship repair and maintenance and Business administration for IWT Companies

Skilled worker training schools

There are 16 schools (6 of them in Jiangsu province).

Total Capacity:	2000 persons enrolled per year
Term:	2 years more or longer
Subjects:	Sailor Oilier and mechanic Radio operator

On-job-training

18 Training centers:

Total capacity:	about 2000 persons enrolled per year
Term:	1 month to 2 years
Subjects:	by demand
Degree:	some schools conferring bachelors

4. Forecast

In light of the economic development and social prosperity, up to the year 2001, the domestic demand for the subjects in the field of IWT is estimated as follows:

- High education: graduates 3800 per year
- Secondary professional: 5500 per year

By the way, most of the universities and schools mentioned above are qualified and authorized to receive students from abroad, special in Asia and pacific region.

5. Problems of Education and Training of IWT in China

Too Low Budget for Education

The economic support to education in China comes from several channels:

- Central government budget;
- Local government budget;
- Companies support for their own schools, and
- Social donations from both domestic and abroad.

Several years ago, China was in the pure central planning control economic system. At that time, central government and local government budgets are the only channels to support education. Social donation were relatively less. Companies support their own schools with the deduction from the profit which they should send up the government. all the companies were state owned enterprises.

China is now in the transitional period from central planning system to market economic system. Governments call for universities and schools to seek economic support through multiple ways. Meanwhile, governments increase education budget every year. But this increase can not catch up with the inflation. The demand that people want to have more education is increasing rapidly as well.

Because of the level of economy and the ideology, support from social donation are not so much as those in industrialized countries.

Some secondary professional schools and skilled worker schools are managed and supported by companies. But some company leaders believe that in support of the education is the responsibility of government.

Especially, recently, some state-owned companies are not running very well. So they have not enough money to support the schools they own.

Due to the reasons above, universities and schools do not have enough money to renew their facilities, to provide more opportunities for their teachers to study new technology, to provide more opportunities for students to practice what they have learned from classrooms and textbooks.

All this makes the education hardly catch the international first-class level.

The Bad Education System Itself Need to Be Improved

Before 1980's, China was in the pure central government planning economic system. Educational system was in the same way. At that time almost all the school budget came from the governments. It was planned by the Government how many students should be enrolled every year, how many students for each major, what they should learn, and how to instruct them, how many class hours there were every day, week, or semester. Even the government agencies had to approve of the school curriculum. In addition, governments provided employment for all the graduates. In this way actually, universities and schools act as workshops, quite different from those in the industrialized counties.

Nowadays, although great changed have taken place in China, but the change in the educational system are not so much as that in the economic section.

During the last few years, modern high-technology has been taken by IWT engineering and business, such as GPS (Global Position System), GIS (Geographic Information System), GMDSS (Global Maritime Distress Safety System), CAD (Computer Aid Design). But the courses in some schools do not meet the changes very well. After graduation, some students can not be well qualified for their professional positions.

6. Conclusions

There is a good educational and training system in the field of IWT in China, in terms of level coverage, geographic locations, major distributions and so on. In this field, China enjoys first-class experts, excellent teachers, and relatively good teaching facilities.

China has plentiful natural inland waterway resources. Most waterways are in natural or semi-natural conditions. Most ships in IWT system need to be renewed. The management system and information system of IWT need to be updated. There is a lot to be done in the future. All of this requires an appropriate professional educational system. It is helpful that China has more opportunities to communicate and exchange with outside world in reforming its educational system.

The major problems in the education system remain to be the too low budget and the too slow speed, with which China's educational system in IWT can catch up with the country's economic reforming.