

# Comparative Study on the System and Diploma between Universit   and the Grande   coles in France

Liu Yang

Institute for Clean and Renewable Energy  
Huazhong University of Science and Technology  
Wuhan, China  
liuyang@mail.hust.edu.cn

Yi Hui

Institute for Clean and Renewable Energy  
Huazhong University of Science and Technology  
Wuhan, China  
yihui@mail.hust.edu.cn

**Abstract**—Chinese engineer and science masters diploma reform is growing vigorously and the distinguished characteristics of diploma construction are strengthening and improving. This article studies and compares the differences between the universit  s and the grande   coles in France in the schooling system and diploma to explain that the greater openness and fluidity between the elite and mass education and the mechanism of yearly academic certification not only make the students adapt to and service society better but also is the intrinsic driving force in the talent training in the French double-track higher-education.

**Keywords**—France Universit  s Grandes   coles

## I. INTRODUCTION

France's higher education has a long history and a unique structure of double-track education around the world. There are both universit  s and grandes   coles. Universit  s as the theme in higher education are public institutions and run the multidisciplinary, fundamental teaching and research activities.

Grandes   coles was also originally founded by the nation and their most important role is training engineers for national institutions including military and civilian agencies (defense, equipment, transportation, industrial, telecommunications, agriculture institutions, etc). Later, the private and business enterprises join to found the grandes   coles. Grandes   coles must be authorized and recognized by the French government. However, they have real autonomy in the organization and teaching. Grandes   coles cover higher engineering schools, art colleges and colleges of higher business and management and implement the elite education.

## II. SYSTEM COMPARISON

### A. Different Entrance Requirements

French Universit  s implement public education and 90% of the students attend nearly the national 90 universit  s. Universit  s carry out the registered system and open style teaching and the high school graduates enjoy full rights in choosing their professional fields and need not participate in any entrance examinations. However, the students can obtain the relevant diploma on the condition that they pass the graduation exam after they have acquired enough ECTS. In short, French universit  s implement the "lenient entry, stringent exit" mode,

which not only maintains the people's right of being educated but also ensures the quality of talents.

On the contrary, Grande   cole implement the elite education and have smaller scale. The students have to pass the entrance exam to be admitted into the Grande   coles. About 10 percent of the high school graduates can enter the classes pr  paratoire aux grandes   coles after the rigorous selection. Those students studying in the classes pr  paratoire aux grandes   coles can participate in the "concours" —unified national examination and only about 10% of them can pass the exam to be the best.

### B. Stage of Universit  s

There are about three stages in universit  s' according to the French traditional educational system and diploma settings. Each stage has the corresponding diploma and every student can get a diploma by the end of each academic year, namely the yearly academic certification (Table 1).

Universit  s will award the successful students DEUG (diplome d   tudes universitaires g  n  rales) after the first two-year study. The second stage is the following two years. But the students will get a "Bachelor" diploma (licence) at the third year and the maitrise diploma at the fourth year. The maitrise is equivalent to the Chinese undergraduate diploma. The third stage is similar to the Chinese graduate education. In the fifth year, the students can get a DEA (diplome de   tudes approfondies) after taking more in-depth courses, attending seminars and passing the thesis defense. DEA diploma implies he or she is qualified to study for PhD diploma. The students can get doctorate (doctorat) diploma through studying, writing papers and passing the defense in three years or longer.

With the development of European Credit Transfer System (ECTS) and the implementation of European unity LMD (licence-master-doctorat), LMD educational system is widely popularized in the French universit  s, which is commonly called "three years (Bachelor) - five years (Master) -eight years (Doctor)" in China and the traditional diplomas of DEUG, Maitrise, DESS and DEA are gradually canceled at the same time. In fact, these French diplomas have their own

TABLE I. SCHOOL YEAR OF UNIVERSITIES AND GRANDE ÉCOLES

LMD	ECTS	COURSE TYPE AND OBTAINABLE DIPLOMA					AGE		
PhD	480	PhD					25		
	420						24		
	360						23		
Master	300	DEA	DESS	DRT		Professional Engineer	Study/Work	22	
	240	Maitrise	MST/MSG Bachelor	magistere		Engineer			21
Bachelor	180	Licence	licence professionnelle	magistere			DNTS	Maitrise & Engineer	20
	120	DEUG	DEUST			Classes Préparatoires aux Grande écoles	DUT		19
	60								18
		Ordinary Academy			Grande écoles	IUT	IUP		
		Universités				Affiliated vocational education			
							Universités		

intrinsic value, and they are still used as transitional, suitable diplomas for domestic universités. The guiding ideology of DESS and DEA also have the practical significance. As the result, French higher education implements the new school system from the autumn of 2005 and actually set up two masters: master of research (master de recherche) and professional master (master professionnel)---the fourth year and fifth year in Universités become first year (M1: master 1) and second year of master diploma (M2: master 2).

Some Universités also set up affiliated IUT (institut universitaire de technologie) or IUP (institut universitaire professionnalisé). IUT is two-year system. After graduation in IUT, students can get DUT (diploma universitaire de technologie). They can study further for one year more to receive DNTS (diplôme national de technologie spécialisée), which is equivalent to Chinese bachelor diploma. In the three-year school system, IUP asks students to start courses from the second year. Student can receive a maitrise and an engineers title (ingénieur maître) after two-year graduation in IUP or receive a master diploma---DRT (diplôme de recherche technologique) with another one year advanced study<sup>[1]</sup>.

Other Universités have a two-year diploma DEUST (études universitaires scientifiques et techniques) or a three-year professional bachelor (licence professionnelle) and a three-year university practice diploma (magistere) as well as the four-year Bachelor diploma of science and technology (MST: maîtrise de sciences et techniques) and Graduate Diploma in Management Studies (MSG: maîtrise de sciences de gestion).

C. Stage of Grandes écoles

Grandes écoles or engineering education is usually divided into two stages. The first phase lasts two years and the second phase is three years, which is equivalent to Chinese five-year master diploma. After graduation from the high school, students apply for Grandes écoles through different channels (Table 1). Some high schools open two-year CPGE (Classes

Préparatoires aux Grands écoles) and students participate in the Grande écoles entrance exam after graduation. Those passing the entrance exam can enter three-year Grandes écoles. Students get engineering certification after graduation, which is equivalent to the Chinese five-year master diploma. The CPGE is regarded as the part of higher education and its graduation diploma is equivalent to DEUG. In addition, the Grande écoles itself also set up the two-year preparatory intees. After graduation, students are either selected or participate entrance exam. In addition to the preparatory classes, students who get DEUG diploma or DEUST or DUT diploma after learning in IUT can apply to participate the Grande écoles entrance examination.

One of the features of French higher education is emphasizing the diversity. Universités don't rule all the lands and a lot of Grande écoles of higher engineering education are considered as a special higher vocational education which has better quality and higher level, recruits the best or the most characteristic students, cultivates intelligent talents for various industries.

III. DIPLOMA COMPARISON

Diploma in France is divided into uniform national diploma and diploma issued by the education authorities. The French government has a strict control of the diploma. The uniform national diploma (mainly including bachelor, master, doctor) is created and managed by the national government. The national diploma is usually issued by the ministry which is responsible for the higher education as well as other relevant ministry such as the ministry of national defense and the ministry of industry, etc. Private universités can set national diploma and courses, but has no rights to issue these diplomas independently and has to be processed by the affiliated universités or public higher institutions. In addition, the French université diploma can be awarded by national government as well as each université, but the université is

strictly supervised by the central government about the issue of national diploma.

Many kinds of education institutions themselves can issue the institutions diploma, with the qualifications given by the state. Engineer diploma is such a diploma issued by the grande écoles. Engineer diploma and master diploma have fully the same effect, but the engineer diploma which has proof of academic knowledge and recognition of professional ability has both academic and professional characteristics<sup>[2]</sup>.

CTI (Commission des Titres d'Ingénieur) is the special agency that belongs to the French ministry of education and is responsible for the engineer diploma education certification. One of its major duties is to evaluate and certificate the engineer cultivation model in the higher engineering education of France. It's similar to the American ABET (Accreditation Board for Engineering and Technology) and the German ASIIN (Accreditation Agency for Study Programs in Engineering, Informatics, Natural Sciences and Mathematics)<sup>[2]</sup>. Public universit s are authorized the qualification by the decision made by relevant ministries according to the opinion of the CTI. Private universit s are authorized the qualification from relevant ministries after the CTI making the decision. In France, Grande ecoles must accept the assessment and certification by the CTI on a regular basis, and only qualified ones have the qualification to issue engineer diploma. Engineer qualification certificate also contains awarding of French national master diploma. In addition at the beginning of each year, French ministry of education will release a list containing the name of universit s that can award the title of engineer and business universit s with their diploma granted the national certification.

Engineer diploma includes a variety of engineer titles. Most of engineer diplomas are awarded by the universit s. If the two universit s are combined, of which one is a French universit , another universit  is in France or abroad school, the diploma can be awarded jointly. If the engineers do further study at least a year after obtaining diploma, they will get a professional engineer title. From 1934 up to now, people can be granted engineer diploma awarded by the state if he or she can paly engineering functions and get certified of his corresponding experiences and abilities in his or her individual professional life. The major difference between this diploma and others is that the engineer diploma awarded by the state not by the universit s, and only grant to the people who engage more than five years in engineering fields. Although the engineer diploma awarded by professional experience, engineer diploma awarded by universit s or by Grande ecoles have the same level of education, but the latter is more closely-watched and respected by the attention in the society.

France is the country that has the most kinds of diploma in the aspect of education. The classification of French diploma

not only facilitate for students to identify their learning goals, but also facilitate for companies to choose and select talents. It provides students with clear and accurate positioning as well as flexible and humanism selection, coinciding with the characteristics of strong plasticity for young people<sup>[3]</sup>.

#### IV. CONCLUSION

In the European bologna process, France launched a series of positive reforms. European unification LMD system and mutual confirmation of ECTS credits has broken French over-finely subject classification and the divisions of distinct boundaries, endowed with greater openness and fluidity, not only created more opportunities for communication between the double-track of French higher education but also made the French higher education and European distribution channels more smooth. By comparison, Chinese higher education system is relatively close on the whole, which is lacking of effective communication between different types of colleges and universities<sup>[4]</sup>.

Since the college expansion in 1999, Chinese higher education has changed from elite education into mass education rapidly. The increased number of students and the shortage of teachers have caused the decline of teaching quality. The measures French higher education undertaking such as encouraging the convergence between grandes  coless and universit s, balancing the elite and mass higher education, promotion on narrowing the gap in education quality and enhancing the balanced development of higher education provide us good examples.

Compared with four-year bachelor and three-year master diploma in China, French higher education save more resources and training time. The mechanism of yearly academic certification can guide students to prepare for their career and integrate quickly into society with the consideration of taking care of the students' actual situation and needs better.

#### REFERENCES

- [1] Wenxin, Wang, French Education Research, Shanghai: The Shanghai academy of social sciences press, 2011, pp. 28-31
- [2] Zhang Xiong, French Engineer Diploma Evaluation and Accreditation Beijing: Science press, 2012, pp. 72-81
- [3] Wei Wu, "The crisis, reform and enlightenment in French double-track higher education," University (academic), 2012, vol. 12, pp. 72-77.
- [4] Hui Zhang, Zefang Dong, "The new developing trend of French higher education shunt mode," Modern University Education, 2013, vol. 2, pp. 57-63.