

# The changing nature and role of vocational education and training in Europe

## VET in higher education: Country Case Studies

AO/DSI/JP/Changing\_Role\_of\_Vet/009/15

### Case study focusing on France

prepared for CEDEFOP – European Centre for the Development of Vocational Training

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*It has neither been revised nor edited by Cedefop.*

## **The changing nature and role of vocational education and training – overall aims**

The purpose of the Changing nature and role of VET-project is to improve our understanding of how VET is changing in the countries belonging to the European Union (as well as Iceland and Norway). Over a three-year period (2016-18) the project will analyse how vocationally oriented education and training has changed in the past two decades (1995-2015) and based on these results investigate the main challenges and opportunities facing the sector today and in the future. Work is divided into six separate but interlinked themes:

- (a) the changing definition and conceptualisation of VET;
- (b) the external drivers influencing VET developments;
- (c) the role of traditional VET at upper secondary level;
- (d) VET from a lifelong learning perspective;
- (e) the role of VET at higher education levels;
- (f) scenarios outlining alternative development paths for European VET in the 21st century.

The study takes as its starting point that vocationally oriented education and training is something more than the traditional VET delivered at upper secondary level (in the form of school-based education or training, apprenticeships, or combinations of these). Due to the requirements of lifelong learning, we are able to observe diversification of VET with new institutions and stakeholders involved. We also see an expansion of VET to higher education areas, partly through reform of existing institutions, partly through the emergence of new institutions. This has been caused by factors internal to the education and training system as well as by external pressures linked to demographic, technological and economic changes.

This particular case study, together with 9 other case studies, provides input to theme (b) of the project ('The external drivers influencing VET developments').

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## Case study template

**Country: FRANCE**

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**Title of the case study: Main evolutions of higher VET in France**

### 1. Introduction

*Please provide a concise introduction that gives an overall indication of the change processes observed (during the last 20 years) related to VET at higher levels in terms of 'academic or vocational drift' or 'expansion of VET at higher levels (outside higher education)'.*

In France, while there is no ambiguity about IVET in upper secondary education (IVET is one of the three tracks proposed - general academic, technological, and vocational, i.e. the vocational pathway either through vocational high school or through apprenticeship), like in many other European countries there is no consensus about the definition of 'higher VET'. As stated in a European report (Ulicna et al., 2016) there are two possible approaches to delimitating higher VET: a narrow and a broader one. In France, the tendency over the last 20 years has been to adopt more and more a broad approach. This is due mainly to two concomitant evolutions: an academic drift and a vocational one. Another major aspect of the French system of higher education is that there is not a true 'dual system' with an academic system on one side and a more informal vocational system on the other side, even though some large private or public companies have developed high-level courses (partly through MOOCs) or applied doctorates in tight relationship with universities or 'grandes écoles'.

As mentioned in the Cedefop European Inventory on NQF (France 2016): 'The French NQF operates with less clear distinction between VET and higher education than many other European countries, signalling a wish to promote vocationally and professionally oriented qualifications at all levels' (Cedefop, 2017). Another important preliminary remark about the French situation is that in France IVET is not limited to the upper secondary level: it includes at least in a narrow sense qualifications at EQF level 5 (like BTS, DUT or equivalent qualifications proposed by the Chambers of trades and crafts), and in a broader sense it also includes qualifications offered at EQF levels 6 to 8. The term 'higher education' (*enseignement supérieur*) is a generic term which defines all qualifications at EQF levels 5 to 8. The term 'higher VET' (*enseignement et formation professionnels de niveau supérieur*) includes IVET tracks and CVET tracks at EQF levels 5 to 8. All these qualifications can be obtained either by IVET tracks, or through CVET <sup>(1)</sup>, or through validation of informal and non-formal learning

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<sup>(1)</sup> In France, CVET is equivalent to professional adult education: *formation continue des adultes*.

(which requires sometimes specific complementary training programmes) sometimes by attending the same institutions (e.g. universities or engineering or business schools). <sup>(2)</sup>

CVET, also called 'adult education' (*formation professionnelle des adultes*), is one the missions of higher education institutions (universities, 'grandes écoles' and other types of institutions) which offer such training programmes to about 300,000 learners every year. <sup>(3)</sup>

All degrees can be acquired either through IVET or through CVET. CVET applies to learners who interrupted their initial education for at least one year and who are either occupied in a job or unemployed.

In formal higher education, for a long time, some degrees have been perceived as 'professional' in opposition with more general academic degrees. It is the case of short-cycle higher education (SCHE) which are mainly prepared in STS (*Sections de Technicien Supérieur*) that are post-baccalauréat classes in high schools or within universities in IUT (Instituts Universitaires de Technologie). Both STS and IUT prepare the students in 2 years to take respectively a BTS (*Brevet de Technicien Supérieur*) and a DUT (*Diplôme Universitaire de technologie*) which are qualifications at EQF level 5. It is also the case of public or private schools or institutes like engineering schools, business schools (run by the Chambers of Commerce and Industry), architecture schools, veterinary schools, nursery schools, social working schools, etc. Moreover, even among long-cycles higher education in universities, some have been for a long time considered as 'professional' (i.e. medicine, pharmacy, teacher education, physical education and sports, etc., and to a less extent 'law') compared to more general studies like humanities or sciences.

However, as it will be further described below, the distinction between these types of higher education has become less relevant because of concomitant academic and vocational drifts. On the one hand, the **academic drift** is mainly due to the new knowledge and competences required by the technological evolution, mainly in ITC, artificial intelligence and big data, or new societal challenges (like ecological transition or democratic issues): there is a need for more general culture and interdisciplinarity, more research capacity and other high-level transversal skills. This has led to increase the general level of education of the population (part of the academic drift) by introducing more academic knowledge in short-cycle higher education and more research in long-cycle professional curricula, but also by a general prolongation of studies: an increasing number of students enter higher education, an increasing number of DUT and BTS graduates prepare a professional Bachelor (*licence professionnelle*), created in 1999, during one additional year of study (EQF level 6), an increasing number of students take a Master (2 more years after their Bachelor) which is a

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<sup>(2)</sup> The qualifications are the same but they can be obtained through 4 pathways: initial education in schools or universities (for students), apprenticeship pathway (apprentices), continuing education (*formation continue*), validation of informal and non-formal learning (VAE)

<sup>(3)</sup> <http://www.enseignementsup-recherche.gouv.fr/pid24823/la-formation-continue-des-adultes-dans-l-enseignement-superieur.html>

EQF level 7 qualification, and more and more students prepare a *Doctorat* (EQF level 8). This evolution has been much influenced by the implementation of the Bologna process.

On the other hand, mainly over the last 20 years, there has been a **vocational drift** in all the universities, except for specialities like medicine which had already been for a long time a model of very good integration of work-based learning and theoretical learning. For example, the creation in 1999 of a '*licence professionnelle*' (professional Bachelor) in most specialities was an important step, but much before universities had already developed professional institutes, like for example the *Instituts d'Administration des Entreprises (IAE)* established in 1955 and called also today '*Ecoles Universitaires de Management*' (about 15,000 students are enrolled today) or the '*diplômes d'études supérieures spécialisées*' (*DESS*) established in 1992 and replaced in 2002 by the professional Masters (with the implementation of the Bologna process). Also, an increasing number of universities have created internal engineering schools as we will see below. But still a more general feature of the **vocational drift** has been the progressive generalisation of the definition of university curricula (of all subjects and specialities) in terms of learning outcomes and competences, including transversal skills required by the labour market (see CEDEFOP, 2016). A symbolic aspect of such a vocational drift and a greater concern of universities about the expectations of the labour market has been the creation by a Decree of 17 February 2014 of a Directorate of the Ministry of Higher Education called '*Direction Générale de l'Enseignement Supérieur et de l'Insertion Professionnelle*', with a department specialised on the issue of the transition to work.

Emphasis has been increasingly given to implementing the learning outcomes approach in higher education. The law of August 2007 (*Loi sur les responsabilités et libertés des universités*) created the obligation for universities to set new services dedicated to employability. This law requires universities to improve their learning outcomes descriptions, both for employers and students. The learning outcomes descriptions form the basis on which all qualifications are approved by *the Commission Nationale de la Certification Professionnelle (CNCP)*. The number of qualifications covered by the CNCP has been steadily increasing in recent years. A significant part of this growth was caused by vocationally and professionally oriented higher education qualifications, mainly at EQF levels 5 and 6 (Cedefop, 2017).

Thus, as a result of the concomitant academic and vocational drift, there has been a convergence between different higher education institutions which will be further analysed below.

However, given the complexity and heterogeneity of short-term training programmes organised by the industries or within some medium and large companies for managerial staff or engineers (i.e. at higher VET levels) it is difficult to give an exhaustive account of all training programmes of higher VET, particularly for higher CVET.

## 2. VET at higher levels

Please briefly describe the current situation related to 'VET at higher levels' in your country and refer to the following questions:

Which **types of vocationally oriented degrees/qualifications** are currently awarded at **EQF levels 5-8** and **since when**? Please include the titles of these types and their NQF/EQF level and **describe them briefly!** Please use the most commonly used English translation for the titles of qualification types and use these titles consistently! <sup>(4)</sup> To which **educational segment** do they belong (e.g. higher education, post-secondary level VET, CVET)? What is the **'importance' of these types** (e.g. in terms of number of learners or graduates) compared to other types (such as number of students enrolled in academic HE programmes)? Are there any prevailing economic sectors?

Please include any **figures or diagrams** (time series), if possible!

## Main types of vocationally oriented degrees/qualifications at higher levels

### 1) Short-cycle studies (2 years after the baccalauréat): EQF level 5 (NQF: level III)

The two main pathways (both established in 1966) are:

- STS (post-baccalauréat classes in an upper secondary school) to take a BTS (*Brevet de technicien supérieur*)
- IUT (within universities) to take a DUT (*Diplôme Universitaire de Technologie*)

A few other pathways and qualifications at EQF level 5 that are much less important in terms of enrolment are:

- **Qualifications at EQF level 5 provided by the 107 Chambers of Trades and Crafts** (*Chambres des Métiers et de l'Artisanat*): *Brevet de Maîtrise Supérieur* (BMS) and *Brevet Technique des Métiers Supérieurs* (BTMS). The BMS concerns mainly some craft activities such as hairdresser, bricklayer or bakery/pastry. The BTMS concerns mainly stone cutters (*tailleurs de pierre*), cabinet makers (*ébénistes*), dental technicians (*prothésistes dentaires*) In all cases, the qualifications give the title of Master Craft Person (*Maître Artisan*) which certifies the ability to run a small private enterprise. (See RNCP on [www.cncp.gouv.fr](http://www.cncp.gouv.fr)). However, it should be noticed that most of the qualifications provided by the Chambers of Trades and Crafts are at EQF levels 3 and 4. The distribution between the levels of qualification for the apprentices in the economic sector of crafts (artisanat) is according to the *Institut Supérieur des Métiers (ISM)*<sup>5</sup>:
  - EQF level 3; 69%
  - EQF level 4: 22%
  - EQF levels 5 or 6: 9% (the great majority are BTS in the sector of crafts: the total number of BMS delivered in France in 2011 was 130 (source: Eurostat) compared with about 130,000 BTS and 47,000 DUT.
- **Diplomas of Applied Arts** (*Diplômes des Métiers d'Art. DMA*) at EQF level 5 provided by public and private institutions which require 2 years of study after a

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<sup>(4)</sup> If applicable, refer to the Cedefop NQF monitoring reports – see: <http://www.cedefop.europa.eu/en/events-and-projects/projects/national-qualifications-framework-nqf/european-inventory>

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<http://ism.infometiers.org/ISM/Barometre-de-l-artisanat/Les-chiffres-de-l-apprentissage>

baccalauréat or a BMA (*Brevet des métiers d'art*). There are various specialities such as jewellery, graphic arts, ceramics/pottery, circus arts, etc. (source: [www.onisep.fr](http://www.onisep.fr)). This degree can be prepared either in a special school or through apprenticeship or through CVET (source: <http://designetartsappliques.fr/content/dipl%C3%B4me-des-m%C3%A9tiers-d%E2%80%99art-0>). For some specialities, like graphic arts, the qualification requires 4 years and is classified at EQF level 6. There are about 500 DMA graduates each year (<http://www.culturecommunication.gouv.fr/Thematiques/Enseignement-superieur-et-Recherche/L-enseignement-superieur-Culture>)

**Table 1: Evolution in France of the number of students in short-cycle higher education (by main types of institution) since 1990 (thousands of students)**

<i>Type of institution</i>	1990	2000	2005	2010	2015	2025*
(IUT)**	74	119	113	117	116	128
STS	199	239	230	242	256	273

\*Forecast

\*\* IUT: *Instituts Universitaires de Technologie*

**Sources:** *L'état de l'enseignement supérieur et de la recherche en France*, n° 2 (2008), Ministère de l'enseignement supérieur et de la recherche ; *L'état de l'enseignement supérieur et de la recherche en France*, n° 10 (2017), Ministère de l'enseignement supérieur, de la recherche et de l'innovation

This evolution depends partly on the demographic data, but in the long run there has been a dramatic increase of the proportion of students entering higher education (including higher VET) as well as of the graduates at different levels (LMD, ISCED or EQF). **In 2015, there were more than 2.5 million students in higher education against about 310,000 in 1960: their number has been multiplied by eight during this period.** This increase was particularly important between 1987 and 1995 because of the sharp increase of the proportion of an age-cohort passing the *baccalauréat* (from 33% in 1987 to 63% in 1995 and 79% in 2016). The **vocational *baccalauréat*, established in 1985**, has been a major factor of this increase. Between 2000 and 2015 the number of students in private institutions has increased by 62% while the total number of higher education students increased by 18%. This private sector represents about one third of the students in STS and in engineering schools, and all the students in business schools.

In 2015, 70.3% of general *baccalauréat* graduates entered university, more than 50% of technological *baccalauréat* graduates entered a DUT or a BTS. In the upper secondary education system in France, there are three tracks; the general academic track which is supposed to prepare for higher education studies leading to a degree of at least EQF level 6, the technological track which is supposed to prepare to vocational short-cycle higher education at EQF level 5 and the vocational track leading to the vocational *baccalauréat* which has as a first goal to prepare students to enter the labour market as qualified workers (*ouvriers qualifiés*). If a majority of vocational *baccalauréat* graduates enter the labour market, about 30% enter a STS (6.7% through apprenticeship). One current issue is to



manage to give a priority to technological baccalauréat graduates for entering IUT and a priority to vocational and technological baccalauréat graduates to enter STS, because as these two short-cycle higher VET tracks are selective, the paradox is that too many general academic baccalauréat graduates enter these cycles which should be first reserved to vocational and technological baccalauréat graduates. The main reason for general baccalauréat graduates to choose these courses is that the rate of passing the exams is much higher than in long-cycle courses of university. So, an increasing strategy is to take a DUT or a BTS with the intention to pursue by a third year for obtaining a vocational<sup>6</sup> Bachelor (EQF level 6).

- **The STS (*Sections de Techniciens Supérieurs*):** In 2016-2017, around 257,000 students attend these courses: one third in the production sector of the economy and two-thirds in the tertiary sector (commerce and services). About 133,000 students pass the BTS each year. 90% of the students are in a STS (public or private) controlled by the Ministry of Education and nearly 8% by the Ministry of Agriculture. There are 113 specialities of BTS. The most attractive for the students are for the tertiary sector: Commerce/Selling (46,000 students) and Accounting and Management (31,000); and for the production sector: Basic Industrial Technologies (13,000) and Electricity/Electronics (10,500). On average, these qualifications are renovated every 5 years to take into account the new expectations from employers. The curricula are defined in terms of learning outcomes by the *Commissions Professionnelles Consultatives* (CPC) as it is the case for the CAP (certificate of vocational ability) and for the *baccalauréat professionnel* / vocational baccalauréat (qualifications at EQF levels 3 and 4, respectively). These commissions include representatives of employers, trade-unions and experts (like pedagogical inspectors from the Ministry of Education). The total number of BTS delivered in 2016 was 133,144: 41,208 in the production sector (32,237 men and 67,601 women) and 91,936 in the tertiary sector (33,306 men and 58,630 women).
- **The IUT (*Instituts Universitaires de Technologie*):** In 2016-2017, 116,600 students attend courses in an IUT (there are 111 IUT in France). There are 24 specialities offered in the 1<sup>st</sup> year and more in the second year by the possibility to choose electives. The distribution between the production sector and the tertiary sector is less unequal than for the STS: 58% in the tertiary sector and 42% in the production sector. In the tertiary sector 2 specialities attract 60% of the students: 'Management of enterprises and administrations' (8,500) and 'Techniques of commerce' (8,500). In the production sector the most attractive specialities are: Electric engineering and industrial computing (7,400); Mechanical engineering and computer-integrated manufacturing (7,100); Civil engineering (4,100). The specialities of DUT are defined in accordance with state regulations: *Arrêtés* of 7 and 15 May 2013, and of 19 June 2013. The curricula are defined and revised by 17 *Commissions Pédagogiques Nationales* (CPN). They give much importance to professional competences through internships, project approaches, teaching by professionals, etc. These commissions include academic researchers of the speciality, representatives of employers, employees, and students, and other qualified experts. The 17 commissions participate in a National Consultative Commission of IUT which also evaluates them since 2000. The National Association of IUT Directors and the National Union of IUT Presidents play also a major role for the management of the whole network of IUT and for developing tight relationships with the industry and the business

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(<sup>6</sup>) In the French language, there is not a distinction between 'vocational' and 'professional': there is only one word: '*professionnel*'. So, the term '*licence professionnelle*' can be translated into English either by 'vocational Bachelor' or by 'professional Bachelor'

world. The total number of DUT delivered in 2015 was 47,616 (42% of women): 18,787 in the production sector (25.5% women) and 28 829 in the tertiary sector (52.8% women).

## 2) 3 year-cycle studies and qualifications at EQF level 6 (NQF level II)

- **Licences professionnelles (Professional or Vocational Bachelors):** created in 1999, they are organised mainly within universities or in post-baccalauréat classes of some high schools (3<sup>rd</sup> year after a BTS), or in a few cases in other institutions through apprenticeship (*Centres de formations d'Apprentis: CFA*). In all cases, the degrees are defined in partnership with industry branches. There are 173 specialities that are proposed (e.g. Design, Human Resources Management, Multimedia, or Tourism) and this national diploma corresponds to 180 ECTS credits. The recent evolution shows a steady moderate progression of enrolment: 38,700 students in 2007; 52,708 in 2015 and 52,821 in 2017 (RERS-DEPP, 2017, p. 158). Students are recruited from an analysis of their personal file and an interview. The curriculum is defined with professionals of the economic sector. It includes an internship of 12 to 16 weeks in France or abroad and a project (individual or within a team) supervised by a tutor which must lead to a written report. About 30 % of graduates choose to further study towards a Master or another degree of a professional school. For the 70 % who try to enter the labour market, this professional bachelor is much appreciated by the employers: about 90% of graduates have a full-time job one year after their graduation (source: ONISEP website). In 2015, the total number of delivered vocational bachelors (licences professionnelles) was 48,744 (49.4% women) against 128,396 general Bachelors. The two main fields of vocational Bachelors were: Sciences (Maths, Physics, Chemistry, Computer Science, Natural sciences): 19,389 (27.7% women) and Economics and Management: 18,185 (62.5% women).

More generally, for all Bachelor graduates the criteria for learning outcomes must be divided into 4 main areas: 1) Common general competences; 2) Pre-professional competences; 3) Transferable competences; and 4) Specific competences related to broad disciplinary subject areas (Ministère de l'enseignement supérieur et de la recherche, 16 July 2012).

- **Paramedical and social work schools at EQF level 6:** These include various specialities, mainly nursing schools that will be described in further detail in another section: their recruitment is organised through a competitive examination and the total enrolment of their students is limited at national level. The public schools have very low tuition and fees compared with the private schools. They all prepare to a state diploma which gives 180 ECTS and is classified at EQF level 6 (NQF level II) since 2009. All the diplomas can be prepared through the apprenticeship pathway in some of the institutions.
  - **Nursing schools:** There are about 300 nursing schools across France: they are called '*Instituts de Formation de Soins Infirmiers*' (IFSI). In 2017, the total number in France of students enrolled in the 1<sup>st</sup> year of these institutes must not exceed 31,000. They prepare in 3 years to the state diploma of nurse, which gives equivalence to a Bachelor degree since 2009. There is an ongoing project to reform these schools in order to further integrate them within universities (see section 6 below).

- **Other paramedical schools:** they prepare to various specialities. For example, there are **24 Institutes of Occupational Therapy** (*Ergothérapie*) distributed in all the regions of France which prepare in 3 years to the same state diploma of occupational therapist. For 2017, the maximum number of enrolments in the first year is about 1,000. Another example is the **assistant radiologist (specialist of medical imagery)**. This other state diploma at EQF level 6 can be prepared in 3 years either in special institutes run by the Ministry of Health and integrated in hospitals or in a few special schools run by the Ministry of Higher Education. Third example at this EQF level is the state diploma of **podiatrist – chiropodist** (*pédicure-podologue*) which is prepared in 3 years, after passing a competitive exam, in one of the 12 institutes (10 private and 2 public) having passed a contract with a university of medicine.
- **Social work schools:** About 350 schools (public or private) propose education programmes to prepare in 3 years one of the 11 state diplomas in the field of social work. The 3 main diplomas at EQF level 5 (but at level 6 from 2018 on) are: 1) **Diploma of ‘social worker’** (*Assistant ou Assistante de Service Social: DEASS*); 2) **Diploma of ‘educator of young children’** (*Educateur de Jeunes Enfants: DEEJE*) which can be prepared in 30 schools; 3) **Diploma of ‘specialised educator’** (*Educateur Spécialisé*) that can be prepared in 53 schools. The curricula of these schools are under the control of the Ministry of Labour. **Two national schools** preparing vocational state diplomas at EQF level 6 under the tutorship of the Ministry of Justice are the **National School of Penitentiary Administration** (*Ecole Nationale de l’Administration Pénitentière*) which recruits about 2,500 students each year at different levels and the **National School of Judiciary Protection** (*Ecole nationale de la Protection Judiciaire*). These schools recruit through a competitive exam students having attended 2 years in higher education and prepare them in 2 years to the state diploma.
- **Professional Bachelor programmes offered by schools of tourism and by some business schools:** A great number of schools managed by the Chambers of Commerce and Industry propose Bachelor programmes (in 3 years) in some specialities such as tourism, marketing, web marketing, etc. The business schools will be further described for their programmes at a Master or Doctorate level (EQF levels 7 and 8).
- **Professional Bachelor programmes or equivalent programmes are also proposed by 90 schools of arts, design, interior design, etc.** They are attended by about 37,000 students. Some degrees delivered are classified at EQF level 6. However, other degrees (like in architecture or cultural patrimony conservation)<sup>7</sup> can be classified at level EQF 7 or 8. The schools, under the tutorship of the Ministry of Culture deliver overall 11,700 degrees each year. In 2013, for architecture, there were about 3,400 graduates at EQF level 7 (Master) and 2,400 at EQF level 6; In fine arts: 960 at EQF level 7 and 113 at EQF level 6<sup>8</sup>.

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<sup>7</sup> <http://www.culturecommunication.gouv.fr/Thematiques/Enseignement-superieur-et-Recherche/L-enseignement-superieur-Culture/Formations-diplomes-et-metiers>

<sup>8</sup> <http://www.culturecommunication.gouv.fr/Thematiques/Enseignement-superieur-et-Recherche/L-enseignement-superieur-Culture>

- Each year 5 Regional Institutes of Administration (*Instituts Régionaux d'Administration: IRA*) recruit through a competitive entrance exam about 700 students who attend a training programme for one year before being appointed as middle-managing staff in the civil service (public administrations). To take the competitive exam the candidates who are students must hold a Bachelor degree, while the civil servants must have at least a baccalauréat and 5 years of seniority within a public administration. All the students at the end of the year are supposed to get the title of 'Attaché d'Administration', i.e. the status of civil servant. Since 2012, the IRA have passed an agreement with a university in order to allow for the students to attend complementary courses for getting an equivalence of Master 1 or Master 2 depending on their precedent degree. About 25% of the students managed to do so.

### 3) Five-year cycle programmes for Masters (EQF level 7) (NQF level I)

- **Engineering schools:** There are about 250 schools or institutes (76 private and 68 integrated in a university). All of them deliver a diploma, called '*titre d'ingénieur*' (Master level) after a studying programme of 5 years. The number of engineering students enrolled in these various institutions have been multiplied by 3 since 1991:

**1991: 59,300;** 2001: 95,000; 2011: 138,400; **2017: 152,500** (source RERS-DEPP, 2017)

The number of diplomas (*titres d'ingénieur*) delivered has also increased significantly (multiplied by 2.4):

**1990: 14,500;** 2000: 21,000; 2010: 29,000; **2016: 35,000** (Source: CDFI web site)

- All schools recruit students through a competitive process. Some schools recruit baccalauréat graduates who attend a 5-year programme, while other more prestigious schools recruit students from very selective special 'post-baccalauréat classes' of high schools called '*Classes Préparatoires aux Grandes Ecoles*' (*CPGE*) after 2 or 3 years of intensive preparation. Other schools (mainly those within universities) can recruit students after a scientific Bachelor. Since the nineties, it is also possible to obtain the *titre d'ingénieur* through apprenticeship. The quality of the '*titre d'ingénieur*' is controlled by a national Commission (*Commission des titres d'ingénieur*) established in 1934. The engineering schools are further described in section 6. A special mention must be made for the **three universities of technology** (*Universités de technologie*) established which work within a network and prepare about 10 000 students each year to become engineers through an interdisciplinary approach (see section 6).
- **Master's programmes in business, commerce and management:** these degrees are prepared either within Universities or in private business schools (the most famous being run by Chambers of Commerce and Industry). **The programmes within universities** are organised either within special institutes called '*Instituts d'Administration des Entreprises*' which recruit Bachelor's graduates, or in departments of Economics and Management. In 2017, about 64,500 students are registered in a Master of Economics and Management within a university. **The Master programmes in business and management are also**

**organised in 3 types of schools:** group 1: 94 schools that deliver a diploma agreed and controlled by the Ministry of Higher Education (126,500 students). The 3 most famous are in the Paris area: HEC, ESSEC and ESCP-Europe; group 2: 34 schools that are recognised by the Ministry but the diploma that they deliver is not controlled by the Ministry (10,500 students); and group 3: 108 schools not recognised by the Ministry (15,000 students). Within the schools of the 1<sup>st</sup> group 82,500 students prepare a Master degree. A national Commission, created in 2001, is evaluating the curricula and the procedures for obtaining a Master and so the conditions to be recognised by the Ministry of Higher Education (quality label): the '*Commission d'Evaluation des Formations et Diplômes de Gestion (CEFDG)*'.

- **Other Master Programmes in Universities:** Since 2014, the distinction between the Professional Masters (*Masters Professionnels*) and the Research Masters (*Masters de Recherche*) has been suppressed because of an evolution of all university degrees towards curricula more oriented to a professional goal and defined in terms of learning outcomes and competences. However, some Master programmes are more related to specific jobs and professions than others. It is particularly the case of **Masters in Law and Political Science** (64,600 students in 2017), **Masters in Education** prepared within special schools within the universities, called *Ecoles Supérieures du Professorat et de l'Education (ESPE)*, which prepare to a Master for teaching and training: *Master de l'Enseignement, de l'Education et de la Formation (MEEF)*. In 2017, there are 57,600 students registered in the 32 ESPE. Another Master is much professionally oriented: the **Master in Physical Education and Sports: Sciences et Techniques des Activités Physiques et Sportives (STAPS)**. Among the 50,000 students registered in STAPS programmes (offered in most of the universities) only 7,000 prepare a Master after the Bachelor. Most of them take the competitive exam to become a teacher of physical education.
- **Some examples of other Master programmes and other professional programmes at EQF levels 7:** in terms of numbers of students the main other professional programmes are **Medical Studies** which last at least 9 years to get the title of medical doctor or physician (126 500 students in 2017) and **Pharmaceutic Studies** (22 500 students) which prepare in 6 years to the state diploma of '*pharmacien*'.
- **23 Schools of architecture** prepare in 3 years a Bachelor and in 5 years a Master in architecture. Students having passed an exam at the end of their 1<sup>st</sup> year of Master in Law can prepare during 18 months (including 12 months for 2 internships) a special certificate to become a lawyer (avocat): the **Certificat d'Aptitude à la Profession d'Avocat (CAPA)**. Specific programmes prepare to **diplomas of Accounting**; in 3 years the *Diplôme de Comptabilité et de Gestion (DCG)* equivalent to a Bachelor, in 5 years the *Diplôme Supérieur de Comptabilité et de Gestion (DSCG)* equivalent to a Master, and in 8 years the *Diplôme d'Expert Comptable (DEC)* which gives the title of *Expert Comptable* (Chartered Accountant). Other example: Among the 14 **schools of Journalism** agreed by the Profession, 11 schools (5 private and 6 public) prepare to a Master (or an equivalent diploma) of journalism in 2 or 3 years after a Bachelor.

- There are other schools preparing to managerial responsibilities in the sectors of social security and of health institutions (hospitals). The **National school of higher studies in Social Security** (*Ecole nationale Supérieure de Sécurité Sociale – EN3S*) recruits each year about 60 students through an entrance competitive exam (half internal and half external candidates) who will become the future directors of the 400 social security institutions across France. This school delivers a Master in ‘social protection engineering’ (Ingénierie de la Protection Sociale) in cooperation with a university. It organises also many CVET sessions for the managerial staff of social security institutions.

More important in terms of enrolment is the **School of Higher Studies in Public Health** (*Ecole des Hautes Etudes en Santé Publique*): this school enrolls each year about 8,000 students in IVET and about 7,000 trainees in CVET preparing qualifications at EQF levels 6 and 7. They prepare to many future managerial responsibilities within the Public sector of health: managing staff and directors of hospitals, sanitary and health inspectors, etc.

- Several schools recruit and train the future Army officers (in different specialities (Air force, Navy, etc.)

#### 4) Doctorate programmes (EQF level 8 diplomas)

- The doctorates can also be regarded as professional degrees in a broad conception of professional higher VET, to the extent that they are very specialised and generally prepared while working in a university, or a research institute, or an enterprise or a public administration. In 2015, the total number of doctorates delivered was: 12,086 (44.9% women): 7,330 in sciences and engineering, 2,911 in humanities, literature and languages, 614 in Economics and Management, and 803 in Law and Political Science.

### 3. Change processes during the last 20 years - educational system perspective

*One of the unique features of this study is the emphasis given to the historical development of VET systems. In this section, the focus is on the change processes that have taken place during the last 20 years related to VET at higher levels in terms of ‘academic or vocational drift’ or ‘expansion of VET at higher levels (outside higher education)’ from the perspective of the educational system.*

*Depending upon the situation in your country, relevant developments might have started already before the 1990s. In other cases there may be no need to take such long-term perspective, but at the very least the commentary should go back to the middle of the 1990s.*

*Please describe first these change processes and their impact on the overall system (3.1), before presenting characteristics of VET offered at higher levels from the perspective of the educational system (3.2). Please clearly distinguish between the different objects and contexts of change, respectively the different types of VET qualifications/programmes offered at higher education levels.*

*Please refer to the “Characteristics and indicators of ‘academic drift’, ‘vocational drift’ and ‘expansion of VET at higher levels (outside HE)’” (presented in Table 2 of the guidance note; the relevant aspects are included in each section here below): Please reflect whether any of these characteristics and indicators can also be identified in your country and which ones – identified in your country - should be added.*

### **3.1. Change processes and their impact on the system**

- a) To what extent can changes related to 'academic or vocational drift' or 'expansion of VET at higher levels (outside higher education)' be observed? To what extent have vocationally oriented programmes/qualifications at higher levels been introduced during the last 20 years and in which way (e.g. by up-grading VET institutions/programmes into higher education, by introducing new types of programmes within higher education without upgrading VET institutions/programmes, or by establishing new types of VET programmes/qualifications outside higher education)?
- b) Can any different phases or stages of this development over time be identified?
- c) What kind of impact does this have on the education and training system? E.g. development of a new sector outside higher education, development of a new sub-sector within higher education (and to what extent has this change led to the establishment of a - full or partial - 'unified', 'binary' or mixed higher education system)?

The first important factor of change related to what can be perceived as an **academic drift** is the increasing number of students in higher education and in higher VET in particular. The new expectations in terms of competences and knowledge due to a fast-changing world and an increasing international competition resulting from the increasing globalisation in a knowledge economy have led over the last 30 years or so to increase the general culture of short-cycle higher VET programmes, to develop interdisciplinarity in the curricula and research capacity at all levels, mainly at levels EQF levels 6 to 8. But, at the same time, there has been a **vocational drift** through some reforms that have developed the professional dimension of education programmes, mainly by strengthening the links between schools or universities and the world of business and industry. This evolution has led to increase work-based learning and internships, access to all higher VET qualifications through apprenticeship, co-operation for applied research between enterprises and schools or universities, generalisation of a 'learning outcomes approach' of all higher education programmes and a design of curricula in terms of knowledge, competences and transversal soft skills required by the evolution of the labour market.

During the last 30 years or so, the main factors of change of the French higher VET programmes have been related to the necessity to improve the fit with the new qualifications required by the employers, to increase the sources of financing higher VET with more support of enterprises (in particular for some new forms of continuing training), to take into account the constraints of the Bologna process and of the European Qualifications framework, and also to take into account the experience of other countries and the recommendations of European institutions and OECD studies and surveys.

This evolution has been gradual over the last 30 years and it would be difficult to distinguish clearly different stages or obvious landmarks (except for the creation of the vocational *baccalauréat* in 1985 and of the vocational Bachelor in 1999).

Even though there has been an increasing role of enterprises and of the industry sectors in higher VET, including some training programmes organised by the industries or some large companies, one cannot say that there is a 'dual' higher VET system in France as for the

German model for example. On the one hand, the role of enterprises and of non-formal education is less developed than in Germany or Switzerland for instance. On the other hand, there is a long-term tendency towards more co-operation between the education system and the economy. But on the whole, some IVET programmes provided by universities remain still dominated by an educative/academic logic while the CVET programmes that they also propose are more influenced by an economic/business perspective. Moreover, the slow development of the validation of prior experience (informal or non-formal learning) for acquiring higher VET qualifications has increased the influence of a vocational drift by taking more into account skills developed through a working experience.

### **3.2 Changes related to characteristics of ‘VET at higher levels’**

#### **3.2.1 Changes related to governance and institutional structures of ‘VET at higher levels’**

- a) *What is the governance structure of these VET programmes/qualifications at higher levels and what kind of quality assurance regulations are in place (e.g. which national/regional authority provides accreditation/recognition, how are aspects of academic or vocational drift reflected in accreditation regulations)? To what extent and how has this changed?*

Higher education in a broad sense, i.e. including higher VET at different EQF levels, is mainly governed by the competent Ministries and by the Regions in tight co-operation with representatives of employers and employees through consultative commissions which include also experts in education and training. This does not refer to specific short-term training courses or seminars organised by some industrial sectors or large enterprises, more and more supplied through digital devices.

**Quality assurance** is implemented through official documents (*Référentiels de formation*) defining objectives in terms of knowledge and competences - in relationship with descriptions of tasks and responsibilities: ‘*référentiels d’emplois*’ - as well as the assessment procedures of learning outcomes. The national diplomas – BTS, DUT, professional Bachelors, Masters, and Doctorates – are explicitly defined by regulatory texts of the competent Ministries: mainly the Ministry of Higher Education, but also the Ministry of Agriculture, the Ministry of Labour, the Ministry of Health and Social Affairs, the Ministry of Defence, the Ministry of Youth and Sports, etc. Other qualifications are regulated by various institutions. For example, the engineering degree delivered by any engineering school called ‘*titre d’ingénieur*’ has to be agreed by **the national Commission des Titres d’Ingénieurs (CTI)**. The ‘*titres professionnels*’ are qualifications delivered under the supervision and agreement of the Ministry of Labour. ‘Qualification certificates’ (*certificats de qualification*) are delivered by industry sectors. These are not automatically registered in the NQF and are evaluated by the National Commission of Professional Qualifications (CNCP) while the degrees delivered under the control of any Ministry are automatically registered in the NQF.

Since the 1980s, **the role of regions** for organising and financing VET (including higher VET) has been gradually increased. They design forecasting plans about the future needs of qualifications at regional level and are responsible for IVET and CVET at this regional level. This evolution aims at better integrating universities and school training programmes in a regional economic and social development policy perspective.



b) *What is the role of labour market stakeholders/companies in relation to these types of programmes/qualifications? To what extent and how has this changed?*

The role of the labour market stakeholders has always been important in the design of IVET and CVET programmes. Their role has increased with the development of apprenticeship (mainly in higher VET) and the creation in 1999 of professional Bachelors and professional Masters programmes in universities. The very recent project (announced in November 2017) of reforming VET in France and to further develop the apprenticeship tracks will still increase the role of labour market stakeholders and enterprises, even for higher VET qualifications, even though the main priority should be to improve the insertion on the labour market of unqualified people and young people dropping out of the education system without any qualification.

c) *What are the funding sources (and with what share) for these type of programmes/qualifications? E.g. what is the role of the State (educational or labour market budget) and of labour market stakeholders? To what extent and how has this changed?*

The role of the state and of the regions in funding VET is important. However, the share of enterprises in financing higher IVET has slightly increased in the last years. It is more important for CVET since an Act of 1971. In 2015, the total spending for adult education was about 14.3 billion euros. From 2006 to 2015, this spending has increased of 0.5% in constant euros. The funding is shared by the enterprises (51.2%), local authorities, mainly Regions (21%), the state (11.6%) and the rest by households. During the last 40 years, the access of adults to continuing education has been multiplied by 4. The average length of training sessions is about 27 hours. The more qualified people have more access to these sessions than unqualified or low-qualified individuals: in 2013, 55 % of the engineers attended a training session financed by their employer against only 32 % of unskilled workers. It depends also on the size of the enterprise: large companies provide much more opportunities of training than the small enterprises. (*L'état de l'École*, 2016).

In 2015, the universities, the higher education schools and the CNAM (see next section) have trained 457,600 adults at higher VET levels (RERS-DEPP, Ministry of Education, 2017).

d) *Which are the key providers of such programmes/qualifications? Do they differ from other providers, such as IVET providers or providers of more academic higher education? To what extent and how has this changed?*

For higher IVET the providers are either public bodies (Universities, some engineering schools) or private (business schools, some engineering schools, other schools or institutes). There are sometimes ruled by some professions (ex: lawyers, chartered accountants, certified geometers, banking managers, etc.). For higher CVET, the providers are private (training firms and consultants, enterprises themselves for their own staff, private schools)

but there is also a public sector (universities, engineering schools, AFPA, CNAM, etc.) which plays an important role.

The **Conservatoire National des Arts et Métiers (CNAM)** plays an important role for higher CVET. Created in 1794, this institution provides higher VET training to 62,500 adult learners (called 'auditeurs') in more than 300 professional fields from short-cycle programmes to professional Bachelors, Masters and Doctorates (in 2017 there are 360 adults preparing a Doctorate). The CNAM delivers more than 1,350 diplomas and other qualifications through programmes organised in 150 centres across France (and 45 institutes abroad). The CNAM includes 21 research labs, 990 teaching/researching staff and 4,700 lecturers who are professionals of the various fields: food industry, chemistry, risk prevention, electronics, transports, marketing, tourism, industrial psychology, accounting, sociology of organisations, communication, artificial intelligence, etc. The CNAM contributes also to the dissemination of a scientific and technological culture across the French society.

An original sector where the representatives of the employers play a major role in providing a supply of qualifications at EQF levels 5 to 7 is the banking sector. Since 1972, the **Centre of Training of the Banking Profession (Centre de Formation de la Profession Bancaire: CFPB)** proposes training programmes through different tracks: initial education to students, initial education through apprenticeship in 14 Centres (CFA) across France, CVET training sessions in 60 Centres across France, and through validation of informal and non-formal learning (VAE) to 35,000 learners. Overall, the CFPB prepares to more than 300 qualifications.

There has not been dramatic changes about the main providers of higher VET over the last 20 years. But, the role of universities and higher education schools (engineering and business schools) has steadily developed in the field of higher CVET in the context of LLL.

### **3.2.2 Changes related to the target groups of 'VET at higher levels'**

- a) *What is the main target group of these types of programmes/qualifications, what are the access requirements? E.g. to what extent is possession of an IVET qualification, professional work experience or the school-leaving exam a requirement? To what extent and how has this changed?*

In France, CVET is equivalent to professional adult education: *formation continue des adultes*. The same qualifications can be obtained through 4 pathways:

- Initial education in schools or universities (for students)
- Apprenticeship pathway (apprentices)
- Continuing education (formation continue)
- Validation of informal and non-formal learning (Validation des Acquis de l'Expérience: VAE).

For higher IVET the access requirements are defined by a required degree/diploma: for starting a STS, an IUT or a Bachelor programme in a University, the Baccalauréat is required, as well as passing through a selective procedure, either based on a file, or an interview (or both), or a competitive exam. For access to an engineering school it necessary to pass a competitive exam; for starting a Master in a university, a Bachelor degree is usually required as well as a selective procedure.

The access requirements are different for the qualifications delivered by the Chambers of Trades and Arts: the prerequisites for preparing diplomas at EQF level 5 are their own diplomas at EQF level 4.

But one of the main innovations in France has been the introduction of new procedures to take into account informal learning and experience for delivering formal qualifications. France first introduced legislation to support **validation of prior learning** in 1984. This system, which is now referred to as validation of learning and experiences - **Validation des Acquis de l'Expérience (VAE)** - has evolved significantly over the past 30 years. VAE procedures, which recognise individual rights to validate non-formal and informal learning, are now embedded in all certificate-granting agencies, and may also be followed for industry-specific certificates. Successful applicants may earn partial or full certification at all EQF levels through the VAE procedure (Michel & Looney, 2015). The recognition and validation of informal and non-formal learning through professional or other experience was established by the **Social Modernisation Act of January 17, 2002**. According to this law, any person having at least three years' experience in any kind of activity (for example, professional or through volunteer responsibilities in a non-profit organisation) has the right to undertake a VAE procedure to validate informally acquired competences. Certifications awarded through this process are recognised by the National Commission of Professional Certifications ("*Commission Nationale de la Certification Professionnelle*", or *CNCP*") also established by the 2002 Act. Individuals may also apply for certificates which are recognised only at an industry level. In 2015, the universities and the CNAM delivered about 4,000 degrees or diplomas of higher VET through a VAE procedure (RERS-DEPP, 2017).

At higher VET levels, the diplomas that are the most obtained through the VAE are the professional Bachelors and the Masters. The types of professional Bachelors the most acquired are: Commerce; Management of Organisations, Management of Human Resources; and Insurance, Banking and Finance. About 40 % of the new Bachelor graduates had previously a degree at EQF level 5 (i.e. BTS or DUT). The advantage of the VAE procedure is particularly significant for those obtaining a Bachelor degree without a previous qualification at EQF level 5 and for those who obtain a Master without a previous Bachelor degree.

In 2015, the distribution of types of qualifications obtained through a VAE process was: Professional Bachelors (37.2 %), Masters (37.1%), Bachelors (7.2%); Engineering degrees (4.7%), Doctorates (0.5%) and miscellaneous other qualifications recognised by the NQF (10.8%).

*b) How can the identity of students (their legal status) be indicated and how has this changed (e.g. are they predominantly students and in some cases interns and trainees or are they predominantly employees enrolled in programmes)? To what extent and how has this changed?*

In higher IVET, the majority of learners are students (even during their internships), but there are also apprentices who are ruled by the Labour Code and who are paid. In higher CVET, the great majority of learners or trainees are either employees or unemployed people. The main evolution over the recent years has been the increasing number of learners obtaining

their qualification at EQF levels 5 to 7 through the apprenticeship pathway and through the VAE. And this trend should continue in the near future as it is an objective of the present government of France.

### **3.2.3 Changes related to the main purposes and functions of 'VET at higher levels'**

- a) *What is the main destination of graduates, which qualifications and rights do they acquire? E.g. do they gain rights for progressing in education (such as access to higher education), do they occupational qualifications and rights or both, educational and occupational qualifications/rights? To what extent and how has this changed?*

At all higher VET levels (EQF levels 5 to 7) there are graduates who enter the labour market and other who choose to pursue further their studies in order to get a higher qualification. Over the last 30 years there has been an increasing proportion of students in higher education overall, and a significant increasing proportion of graduates at EQF level 5 who prepare a Bachelor, mainly a vocational Bachelor. More recently, there has also been an increasing proportion of Bachelor graduates who prepare a Master, either directly or after 1 or 2 years on the labour market by attending part-time programmes (*enseignement en alternance*). Such trends can be observed in all types of qualifications, even in some sectors in which the employers do not give automatically a preference to Master graduates rather than Bachelor graduates.

A specific issue has risen in medicine where an increasing proportion of students choose to study 3 or 4 more years after their medical diploma in order to become 'specialists', so that there is now a lack of generalists, mainly in rural areas.

- b) *What is the occupational status of graduates? E.g. will they be technicians/professionals? To what extent and how has this changed?*

Short-cycle higher VET graduates at EQF 5 (BTS and DUT) are recruited as technicians. It is also the case for a majority of professional Bachelor graduates but these have better opportunities to climb later in the hierarchy and have more responsibilities during their professional career. All engineering degrees give the title (*titre*) and the job of 'engineer'. The level of responsibilities depends on the prestige of each engineering school. There have not been important changes in the occupations corresponding to these higher VET qualifications, except for a slight tendency to some '*déqualification*' in some economic sectors (being recruited at a level of a lower qualification) because of a surplus of the number of graduates with respect to the actual needs of the labour market. This phenomenon is sometimes described as the consequence of 'an inflation of diplomas' (*inflation des diplômés*).

### **3.2.4 Changes related to the perception of 'VET at higher levels'**

- a) *How are these VET programmes/qualifications at higher education levels perceived? Are they considered as second choice, equal to more academic higher education programmes or are they even valued higher? To what extent and how has this changed?*

Over the recent years, there has been a more positive perception of some higher VET programmes because they are a relevant response to the technological, digital and ecological transition. In particular, engineering programmes and technological Masters and Doctorates are very much appreciated by the employers and by the public opinion. But it has always been the case, mainly for the engineering schools or for the universities of technology.

#### **4. Impact on content and delivery of qualifications and programmes - the epistemological or pedagogical perspective**

*This section focuses on the implications of 'vocational or academic drift' or of the 'expansion of VET at higher levels (outside higher education)' for the content and delivery of programmes and qualifications.*

##### **4.1 Changes in relation to content and profile**

- a) *How can the content or profile of VET programmes/qualifications at higher levels be described? E.g. accentuation or reduction of theoretical, abstract and disciplinary based knowledge vs. practical or experience based knowledge or an enhanced emphasis on the integration of professional and academic knowledge? To what extent and how has this changed?*

As already mentioned, there has been a general convergence of higher education programmes (formal and non-formal) because of the concomitant academic and vocational drifts. The content and profile of short-cycle VET programmes (EQF level 5) has introduced more general and interdisciplinary approaches and the more traditional long-cycle academic programmes (EQF 5 to 7) have introduced learning outcomes and competences approaches, more internships, and more teaching by industry/enterprise professionals. The development of research competences at all levels can be interpreted by both an academic drift and a vocational drift, as applied research is more and more developed in co-operation with enterprises (e.g. through research contracts between universities or schools and enterprises). For example, schools, universities or even IUT are increasingly applying for patents which bring more financial resources.

The most obvious change is the evolution within universities that have much more taken into account the need to develop knowledge and skills required by the labour market (including transversal soft skills), without giving up academic knowledge and general culture approaches, in particular through more interdisciplinarity (cross-fertilisation between traditional disciplines). A specific recent impact of the economy has been the increasing expectations of the enterprises of many sectors to include an ecological culture and technology in the curricula of higher VET institutions (universities and schools). It is particularly the case for engineers.

- b) *To what extent do the learning outcomes refer to a specific occupation/profession, to a broader vocational field and to what extent can an equal balance between occupation-specific and transversal learning outcomes (such as leading teams, entrepreneurship) be identified? To what extent and how has this changed?*

At all EQF levels, there has been an increasing search of a balance between occupation-specific and transversal learning outcomes, in particular 'soft skills' like the capacity to adapt oneself to new situations or new issues to solve. In most cases, the higher the level of a

qualification programme, the more specialised knowledge is required. For example, the Masters are more specialised than the Bachelors. In Medicine, all programmes during the first 7 years prepare to be a generalist physician. The students who attend 2, 3 or 4 more years in university programmes become more specialised in cardiology, neurology or other specific medical domains. There are differences among universities or schools. For example, the most prestigious engineering school – the ‘Ecole Polytechnique’ - proposes a broader conception of the vocational field of engineering. As a result, many graduates from this school do not become engineers but rather company managers.

Concerning the training programmes organised by the companies themselves they are most of the time more specialised (focused on particular jobs) and more and more often using digital resources (distance learning, expert-systems, simulation devices, etc.)

#### **4.2 Changes in relation to the delivery**

- a) *How can the pedagogical/didactical approach in relation to VET programmes/qualifications at higher levels be characterised? E.g. by enhanced practice-orientation (learning by doing) and work based learning (e.g. as traineeship periods) or by enhanced theory-based reflection on practice and scientific research? In which formats are they offered (e.g. as part-time study programmes for workers, as ‘dual study programmes’)? To what extent and how has this changed?*

Over the last 30 years, a general trend for higher VET degrees has been to give more importance to internships and work-based learning, but also to transversal skills and interdisciplinary knowledge. This is particularly true for qualifications at EQF levels 5 and 6 (ex: DUT, BTS and vocational Bachelor) in all fields. The definition of curricula in terms of learning outcomes has been another major change over the last 15 years or so for all qualifications, mainly for the Bachelors and Masters delivered by universities.

At a Master level (in universities, engineering schools, and business schools) an effort has been made for developing scientific research in co-operation with companies. This evolution can be perceived both as an academic drift (research becoming a more important aspect of the fame of institutions) and a professional drift because research is more and more related to some needs of the companies which finance this research and more often remunerate doctoral students who are under a status of internship. The engineering and business schools are requiring more and more a doctorate level for their teaching staff and the universities are using more often company professionals to teach along with academic teaching staff.

As for the internal training programmes of companies, there are more and more provided through distant learning (like MOOCS) and other digital devices (ex: all the training sessions of Casino – important distribution company of more than 71,000 staff in France –are through distant learning).

- b) *Which learning sites are used? E.g. mainly classroom with some practical experience, WBL-sites including real companies, multiple learning sites? To what extent and how has this changed?*

There are increasing learning web-sites, flipped classrooms, MOOCs, junior enterprises, etc. for all higher VET institutions. This trend has been accelerated over the last 10 years because of the technological change in computers, Internet, artificial intelligence and expert-systems. But, there are still traditional courses in IUT, STS, universities, engineering and business schools. At EQF levels 6 to 8, there has been a steady trend towards more WBL inside the companies in the curriculum.

- c) *What is the educational and professional background of teachers? E.g. are they required to have comprehensive work experience, are they part-timers who are also 'practitioners' or teachers with professional experience in industry, are they trainers in companies, do they need to have an academic degree? To what extent and how has this changed?*

Concerning the educational and professional background of the teaching staff, the requirements differ according to the EQF level of the instructional programmes. At EQF levels 5 and 6, the tendency has been to give an increasing role to professional experience in industry and management. At EQF levels 7 and 8, the main criterion for recruiting lecturers and professors is the doctorate and research publications in classified reviews and journals. For example, it is to some extent a paradox that the most famous business schools compete to recruit some academic teaching staff having published in famous journals without taking much into account their business experience. It is also the case in some universities. This is, to a certain extent, the consequence of criteria brought about by international rankings like the Shanghai ranking. The less prestigious engineering or business schools are less influenced by this evolution and by the impact of the Shanghai ranking.

On the other hand, for a long time, medical studies have been a very good example of a teaching staff having a perfect balance between professional and academic background.

These changes have been implemented at a slow and regular pace over the last 15 to 20 years, with some acceleration in the last 4 or 5 years

## **5. The context of change: rationale and drivers for change or persistence**

*This section aims at understanding how policy influences and justifies the change processes and which external factors influence and shape policy responses/decisions and the change processes observed.*

- a) *How and to what extent are the change processes supported (or hampered) by specific educational policies?*

Over the last 30 years, there has been some continuity between successive governments in order to implement higher VET policies likely to develop on the one hand the links between education institutions and enterprises, and on the other hand the co-operation between different types of institutions like universities and other schools or research institutes (see successive laws on higher education, particularly the laws of 2007 and 2013).

- b) *What is the rationale for offering VET programmes/qualifications at higher levels respectively for the changes observed? How are these changes justified in*

*educational policy? (E.g. increasing labour market relevance of curricula/qualifications, securing supply of highly skilled labour, professionalism, innovation and economic growth in enterprises, individual and social progression?)  
To what extent and how has this changed?*

The general trend towards an increasing number of students continuing to study in order to get higher levels of qualification does correspond to a real need expressed by the employers in many economic sectors (not in all), so it is justified by a labour market relevance and the necessity to innovate and compete within the global knowledge economy and society. But at the same time in some traditional craft or industrial activities, there is still a need of employees at an EQF level 3 and 4. It is also the case for the type of jobs required by the aging of the population: the increasing proportion of elderly people require more homemakers, home help support and welfare workers.

c) *Which drivers for change or persistence can be identified that shape policy responses? (E.g. European/international developments, such as Bologna process – harmonisation of degree structures in higher education, expansion of higher education, autonomy of universities, technological changes, EQF/NQF implementation)?*

The Bologna process and the implementation of the EQF have certainly played a major role; but it is more generally the case for all the international studies and surveys as well as the contacts between experts within the context of the Open Method of Coordination initiated by the European institutions. In particular the Bologna standard LMD (Licence, Master, Doctorat) has been the main cause of the increasing proportion of students looking for a Bachelor after their BTS or DUT. Also the universities and the engineering schools care more than before about the transcription of the degrees they deliver in the NQF/EQF classifications as it has an impact on their financial resources and the attractiveness of their diplomas. The regular increase of universities' autonomy since 1968 has also played an important role in pedagogic innovations and the development of new modes of co-operation with their local and regional environment.

d) *How are the change processes perceived in the country? (e.g..are they generally welcomed, are there critical remarks?)*

The changes are generally well perceived by the public opinion, but there is still a certain conservatism of universities that are sometimes reluctant to a fast increasing co-operation with enterprises or with other educational institutions.

## **6. Zooming in on nursing and engineering**

*Please reflect on the particular situation in the nursing and engineering areas: Which main change processes (in relation to 'academic drift', 'vocational drift', expansion of VET at higher levels outside higher education') can be observed in this area? What are the specificities and differences compared to other areas?*

**a) Nursing**



There are about 300 nursing schools across France: they are called '*Instituts de Formation de Soins Infirmiers*' (IFSI). In 2017, the total number in France of students enrolled in the 1<sup>st</sup> year of these institutes must not exceed 31,000 (national quota). They prepare in 3 years for the state diploma of nurse (*Diplôme d'Etat d'Infirmier/Infirmière: DTI*). There is an ongoing project to further reform these schools in order to better integrate them within universities. A regulation of 2009 (*Arrêté du 31/07/2009*) has set up a complete reform of the DTI by modifying the previous system established by a regulation of 1992 of the Ministry of Health.

This reform was partly a consequence of the Bologna process and allowed to attribute the degree of Bachelor ('*Licence*') to those having succeeded to the competitive exam required to obtain the DTI and thus to be able to pursue their education towards a Master or even a Doctorate. The reform established a national framework defining objectives and content of the education programme as well as the criteria and procedures to assess learning outcomes: the national '*Référentiel de formation*'. It is expressed in terms of competences and required knowledge in different fields like anatomy, biology, pharmacy, psychology, law, etc. It lists some specific competences directly related to the professional tasks of a nurse in different contexts as well as transversal soft skills. It also states that the 3-year programme must include 6 semesters of 20 weeks, i.e. a total of 4,200 hours, divided in 2 equal parts:

- 50% for theoretical learning, through lectures (750 hours), practical exercises in groups of students (1,050 hours) and a personal project with a mentor (300 hours), and
- 50% for practical clinical work through 6 different internships in public or private hospitals, public or private medical analysis laboratories, etc.

The '*référentiel*' defines 59 units of teaching covering many fields: e.g. biology, nursery techniques, human and social sciences, law, working methods, behaviours at work, team work, etc. (sources: ONISEP.fr and <https://www.infirmiers.com> and Legifrance website for the Regulations). The competitive exam at the end of the training includes written and oral examinations.

A recent report (June 2017) of the Inspectorates depending of the Ministry of Higher Education and the Ministry of Social Affairs and Health (IGAS/IGAENR, 2017) has proposed a number of policy measures in order to strengthen the integration of nursery schools and other paramedical schools within universities. It proposes also some measures to be taken by the Regional Health Agencies (*Agences Régionales de Santé: ARS*) and the Regional Authorities in order to better rationalise the supply of health structures and the setting of quotas of medical and paramedical staff within the regions.

Overall, the evolution since 1992 shows a double general objective: 1) upgrade the scientific knowledge of nurses (through a better integration within universities and more interdisciplinarity); 2) Reinforce the approach in terms of learning outcomes and transversal skills, and better articulate theoretical learning and practical experience in real professional contexts.

The evolution of nursing schools is a perfect example of the concomitant trends of an academic drift and a vocational drift in higher VET.

### **b) Engineering**

There are about 250 engineering schools or institutes (76 private, and 68 integrated in a university). They deliver a diploma, called '*titre d'ingénieur*' (Master level) after a studying

programme of 5 years. The number of engineering students enrolled in these various institutions have been multiplied by 3 since 1991:

**1991: 59,300; 2001: 95,000; 2011: 138,400; 2017: 152,500** (RERS-DEPP, 2017)

All schools recruit students through a competitive process. Some schools recruit *baccalauréat* graduates who attend a 5-year programme, while other more prestigious schools recruit students from very selective special 'post-bac classes' of high schools called '*Classes Préparatoires aux Grandes Ecoles*' (CPGE) after 2 or 3 years of intensive preparation. Other schools (mainly those within universities) can recruit students after a scientific Bachelor. Since the nineties, it is also possible to obtain the *titre d'ingénieur* through apprenticeship. The quality of the '*titre d'ingénieur*' is controlled by a national Commission (*Commission des titres d'ingénieur*) established in 1934. This degree is officially equivalent to a Master degree. The main evolution over the 30 last years has been the creation of engineering schools inside universities.

Most of the engineering schools are under the responsibility of the Ministry of Higher Education and Research, but some prestigious engineering schools depend on other supervising Ministries: e.g. *Ecole Polytechnique* and *Institut Supérieur de l'Aéronautique et de l'Espace* (Ministry of Defence), or Agricultural and Agronomic engineering schools (Ministry of Agriculture).

The consistency and the quality assurance of all the '*titres d'ingénieur*' is provided by the *Commission des Titres d'ingénieur (CTI)*, which evaluates the curricula of all the engineering schools in France that are officially allowed to deliver a '*titre d'ingénieur*'. This degree is not a national diploma, it is a different degree for each school and the title of engineer must mention the name of the school. The CTI is composed of 32 members belonging to three groups: 16 representatives of the teaching staff of schools, 8 representatives of employers and 8 representatives of engineers. The Commission has designed a general framework of references and objectives which is a useful guide for all the schools for their self-evaluation.

The main groups of schools are the network of Arts and Crafts (*Arts et Métiers*) created at the end of the 18<sup>th</sup> century, the *INSA* group (National Institutes of Applied Sciences), The Institute *Mines-Télécom*, the network of '*Ecoles Centrales*', the network of National Polytechnic Institutes (*Instituts Nationaux Polytechnique: INP* of Bordeaux, Grenoble, Nancy and Toulouse), the network '*Polytechs*' grouping engineering schools inside universities. The most famous *Ecole Polytechnique* and its applied schools are under an ongoing process of reform.

Overall, one major evolution of these schools is the development of their capacity of research, through new relations with other research institutes in France and abroad, but also with research directorates of large companies or networks of start-ups. Another evolution has been the possibility, starting in the nineties, to become an engineer through an apprenticeship pathway. There were about 17,500 apprentices in engineering in 2015 and about 5,000 degrees are delivered each year through this pathway. Also 1,700 engineering degrees are delivered each year through continuing training. The co-operation with enterprises, already established for a long time, has been developed further, mainly in the field of research, through specific partnerships and technological incubators. The schools are more and more participating to regional development poles and to special programmes of research - '*Instituts Carnot*' – created in 2006 and inspired by the model of the German

*Fraunhofer* institutes, but not organised in the same way. In 2017, there are 38 *Instituts Carnot* in France which receive important funding from the National Agency for Research, in particular in the context of the national policy of 'investments for the future' (national governmental programme). The engineering schools have also taken advantage of the industrial contracts of training through research activity - *Contrats Industriels de Formation par la Recherche (CIFRE)* - which finance doctorates. Another evolution is the necessity of finding new financial resources through an increase of tuition and fees, fundraising through specialised chairs, the creation of foundations, etc.

The three **technological universities** (*universités de technologie*) – i.e. those of Compiègne (created in 1972), of Belfort (1985) and Troyes (1994) - are tightly related in a network since 2012 and they include about 10 000 students. Each year 1,800 engineers are graduated after an interdisciplinary curriculum of 5 years after the *baccalauréat*. Inspired from the American MIT model and the technological university of Lausanne (Switzerland) the curricula give some freedom of choice of courses to the students subject to the constraint to attend 1/3 of scientific courses (maths, physics, and chemistry), 1/3 of technological courses and 1/3 of humanities and social sciences. In 2016, three months after their graduation, about 97% of the new graduates has found a job (Le Monde, 7/11/2017: interviews of the 3 directors).

## 7. Current debates and future perspectives

*Please describe main current debates and any trends that can be observed or expectations related to future developments of 'VET at higher levels' (and specifically in the nursing and engineering areas) and provide evidence underpinning trends or expectations.*

- a) *What are the main current debates related to 'VET at higher levels' in your country, if any? Are there any main recent/planned developments or reforms related to 'VET at higher level*

A major debate is about the implementation of new networks of different schools and universities in order to create new synergies and increase the capacity of research. But it is a difficult process to implement. The setting up in 2006 of research and higher education poles (*Pôles de Recherche et d'Enseignement Supérieur: PRES*) has led to some implementation issues. These PRES had the objective to create networks on a regional territory grouping universities, grandes écoles and research institutes. 27 PRES were created between 2006 and 2012, and then suppressed by the Act of 22 July 2013 (*Loi sur l'enseignement supérieur et la recherche*) because of very limited positive results.

This law gives a new objective to the universities: help the students to design a personal and professional project through a progressive specialisation. The PRES are replaced by communities of universities and schools which have not yet operated very effectively in many cases.

Another project is to develop powerful technological universities (*universités technologiques*) like the MIT or Cal Tech in the US or the Polytechnic Institutes of Lausanne and Zurich in Switzerland. A paradox is that the public image of technological universities in France remains ambiguous despite the good ranking of the first technological university established

in 1972: the University of Technology of Compiègne (ranked second for the quality of its engineering programme, just after the *Ecole Polytechnique*).

- b) *Can any trends related to future developments be observed? (e.g. in terms of increasing or decreasing use of 'VET at higher levels'; changes in regulations, types of providers offering 'VET at higher levels', profile of learners/teachers, involvement of labour market stakeholders, partnerships/cooperation; development of new types of 'VET at higher levels'; coverage of 'emerging' fields)?*

There are not enough foresight studies about the future of higher VET in France, but the trends (described above) about the development of a better co-operation with the industry and enterprises should continue, as well as an increasing effort of research, and research and development, at all higher VET levels.

- c) *Please add any further information and concluding remarks!*

One main challenge is to create real **poles of excellence in technological research and teaching** that would have a critical mass in order to be competitive at an international level. There is still some tension between the academic logic of the Ministry of Higher Education and the logic of the Ministry of labour which is mainly a confrontation of historical cultures despite the convergence resulting from the concomitant academic and vocational drifts throughout the higher VET system.

There is a strong will of the new President of France to reform the vocational education and training in France and improve its effectiveness and efficiency. But the first priority is to improve VET at EQF levels 3 and 4 in order to reduce the important unemployment of unqualified people.

## 8. Overview

*This table should provide an overview of what types of changes due to 'academic or vocational drift' or 'expansion of VET at higher levels (outside higher education)' can actually be observed in the country.*

*Please indicate the main processes and phenomena identified during the last 20 years in the table below – referring to the direction of change, the object of change, the context of change (or target area of change), the key processes observed and the results of these processes as well as their time frame and indicate the sections in which they are presented! Examples of key processes/results are presented in table 1 of the guidance note.*

Table 1      **Overview**

Direction of change	Object of change	Context/target area	Key processes observed / results	Timeframe	Section
<b>Academic drift</b>	<b>Higher Education</b>	professionally-oriented HE	More applied technological research (from EQF level 5 to EQF level 8)	Mainly over the last 20 years	
		traditional (or academic) HE programmes	More interdisciplinarity in universities (Bachelors and Masters)	Mainly since 2013	
	<b>VET (outside HE)</b>	VET transformed to HE	More applied research within the companies or start-ups	Mainly over the last 10 years	
		VET offered at higher levels outside HE	Emergence and development of enterprise campuses	Mainly over the last 20 years	
<b>Vocational drift</b>	<b>Higher Education</b>	professionally oriented HE	Learning outcomes (and competences) approaches More internships Junior enterprises	Mainly over the last 10 years	
		traditional (or academic) HE programmes	Learning outcomes approaches (see professional Bachelors and Masters)	Mainly over the last 5 years	
<b>Expansion of VET at higher levels (outside HE)</b>	<b>VET at higher levels (or 'higher VET') offered outside HE</b>				

Development of short high tech training sessions offered outside HE (Short term seminars of specialisation and updating knowledge organised by companies or private training institutes)

Development of MOOCs and expert systems on web sites which update the expertise of engineers and managerial staff of companies and public administrations.	Mainly over the last 10 years	25 years	
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