

# 4 A Look at Professional Higher Education in Europe

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## 1 What is meant by professional higher education (PHE)?

The term professional higher education cannot easily be defined. Rather it is a '*passe-partout*' word for educational programmes and trainings that exist under different education structures in most European countries. However, at present, there is no sharp, generally acknowledged definition of PHE, and one shall not expect that such definition will appear soon.

The only justification for such a term may then be that throughout Europe there are institutions and programmes that profess themselves as profession-oriented, or want to be styled as such. This because they recognise themselves in a number of features or indicators that are linked to the predicate 'professional.'

From the above-mentioned absence of any categorisation we may conclude that PHE is just part of higher education and therefore operates within the same triangle of education, knowledge creation (research) and services to the community. Another advantage of this approach is that it is possible to define PHE without referring to historical levels and (national) (H)E structures, and even not to certain types of institutions and ways of learning. PHE can occur in all kinds of institutions in the broad spectrum of academic, professional and vocational strands, in the same way as it can be offered in several modes of learning (including the traditional ones).

Identifying academic institutions with 'highly theoretical courses' and professionally oriented institutions and programmes with 'practical skills development or training' means to disregard the fact that the comprehensive universities have offered and continue to offer vocational trainings such as for prospective physicians, dentists, veterinary surgeons and architects, which are all 'professionals' in their own right.

## 2 Past and present evolutions and trends that influence the current debate on PHE

In past decades, we could witness various *convergent and divergent processes* in higher education, which have had an influence on what is perceived as professional versus academic higher education. On the one hand, an ‘academic drift’ pushed many ‘non-academic’ institutions to profile themselves as (near) equivalents to the traditional universities, often quite successfully (e.g. as was the case in Germany with the ‘*Fachhochschulen*’).

This because governments and also society tended to consider the ‘non-university sector’ (a common name in the early days of the EU-sponsored programmes) as being second-class entities in the world of higher education, next to the research universities.

On the other hand, the explosion of the technological and commercial education sectors dating back to as far as the nineteen-seventies, in combination with a rise of income for middle class families, led to a steep rise of student numbers, which were (to be) trained in the newly established polytechnic-type of institutions (especially in West European countries). Some of them developed into new (‘red-brick’) universities, after gaining their autonomy from local authorities (as was the case in e.g. the United Kingdom).

Soon a rationale for such type of institutions was then developed, in both government and employers’ circles, which was based on the ‘employability’ factor, namely that a training which also puts an emphasis on skills is a guarantee of prospective careers in a well-defined job. This rationale has been upheld till recent times, only to be shattered by the recent economic and financial crisis.

Academic programmes would reluctantly in the beginning and then increasingly in the last decades adopt this reasoning, which meant that a ‘vocational drift’ became apparent in a large number of research universities. The National Qualification Frameworks that have been developed the past few years have strengthened this process, and even highly academic programmes felt compelled to include practical elements into curricula, and in the formulation of learning outcomes.

The above meant that the boundaries between originally purely academic trainings (in some disciplines at least) and the original professional ones became blurred.

From the viewpoint of the PHE sector, there is always a ‘general’ education content in professionally-oriented programmes, as it is precisely this component that makes them belong to ‘higher education’. The shift of paradigm to learning outcomes-based programmes, with the right combination of technical or vocational and more general humanistic skills has only strengthened the concept and perception that PHE is just a ‘variety’ of higher education.

A second factor of influence is the *nature and status of the provider*. With ‘nature’ is meant the profile of the institution based on its mission, whereas the ‘status’ refers

to the organising authority or awarding body (public institution, privately owned or a blend of this).

PHE programmes are found in a variety of settings, which can be (and mostly is) an individual institution providing professionally-oriented programmes. Other contexts exist where they are affiliated to or integrated into a 'comprehensive institution', which offers vocational programmes next to academic ones.

The discussion on the situation of 'Level 5' of the EQF in the different national qualifications frameworks is essential as it is in some countries the interface between higher vocational and higher education.

At present, different concepts of higher education institutions (HEIs) co-exist also in the academic range of institutions (from the post-Humboldtian "ivory tower" to the "entrepreneurial university"), and now also 'dual learning' institutions as they came into existence in some of the federal German states, on the model of the long-established vocational trainings.

The so-called 'dual universities', with sometimes mixed 'ownership' of the management are mostly public institutions, which provide a system of shared responsibilities between the public authorities and private companies, who take care of the technical or practical aspects of the training, while paying the student a salary, who is for this part considered an employee. Such joint initiatives are rare in other countries, as they can only exist if the prevailing economic conditions of a country allow this, which is not often the case in the current economic and financial crisis.

A third important factor is the *terminology*, as reflected in the name of the *institutions*, the *programmes* and especially of the *degrees*.

For the important shift in the name of the institutions with a clear and long-standing vocational or professional orientation, as is the case with the present 'Universities of Applied Sciences' see further on.

In a number of countries the degree name is linked to the professional or academic orientation of the programmes, with professional and academic bachelors respectively. Others are opposed to such a dichotomy, and prefer to call them qualifications with a certain 'orientation'.

In many countries, the degrees 'academic bachelor' and 'professional bachelor', although classified at the same level of the qualifications framework (1st cycle/EQF Level 6) are not fully compatible and direct continuation of second-cycle studies by "professional bachelors" is virtually impossible without 1 to 2 years of 'bridging studies'.

The occurrence of such a distinction (professional – academic) becomes rarer in the second cycle of the qualifications framework, and is virtually non-existent on the doctoral level. Countries with a binary system of higher education (in the same way as it exists on the level of secondary education, where we have the terms technical vs. gen-

eral education) more often have the distinction than is the case for the countries with a unitary (university only) type of higher education.

### **3 Universities of Applied Sciences (UAS), an acknowledged name in many European countries**

Universities of Applied Sciences is a (relatively) new name, which is gradually substituting the original University Colleges, still in use in the UK and other countries that tend to copy the English example. Traditionally, University Colleges are the former Colleges, which were either mono-disciplinary and teaching advanced and specialist vocationally-oriented trainings, or else multi-disciplinary colleges that had not (yet) reached university status, for several reasons: less than five faculties or disciplines, under 5,000 students, no doctoral degrees, etc. Nowadays the term University College is mainly in use in the UK for HEIs which are in the above described position and feel comfortable in it, as they have established a close connection with the world of employment, for the specialist trainings they are offering.

The term Universities of Applied Sciences (UAS) is a translation of the original German '*Hochschule für angewandte Wissenschaften (HAW)*'.

Since the Bologna process started '*Universitäten*' and '*Fachhochschulen*' award in Germany legally equivalent academic bachelor's and master's degrees, while some (of the largest) '*Fachhochschulen*' award doctoral degrees as well.

Both Switzerland and Austria used the same denomination, and the example has been followed by the Netherlands, Finland and some of the Baltic countries. Other countries, like Lithuania, only use the term to paraphrase their own denominations for the use of their international contacts, but never in a 'home' context, as their own legislation exclusively reserves the term 'universities' for the 'research' universities. The same for countries like Portugal (where the native term is '*Instituto Politécnico*') and Ireland (where the native term is 'Institute of Technology') who also consider UAS as a suitable translation in an international context. Others like Denmark or Belgium (mainly Flanders) continue to use the term University College, as the term 'applied sciences' seems to exclude the human sciences (except for economics), and also the Schools of Arts. Croatia appears to adopt a middle-of-the-road solution, by choosing the term 'University Colleges of Applied Sciences'.

As there is also a lot of research (though of an applied or technological nature) done at '*Fachhochschulen*'/UAS, mainly sponsored by industry, the main difference with universities seems to be that only the 'real universities' can award doctor's degrees, though some '*Fachhochschulen*'/UAS also run doctoral programmes where the degree itself is awarded by a partner university (Weert/Soo 2009).

## 4 The place of PHE in the current debate on the role of higher education

A key part of the modernisation agenda for higher education, as advocated by the EU, is the reform of higher education in order to meet the requirements of the labour market.

In many countries, such a reform has involved either the creation or further expansion of a type of HEI, generally known as a *professional* HEI (sometimes also referred to as advanced vocational education), which is specifically targeted towards this goal, or the reform of current HEIs (of all types) through the *professionalisation* of courses, i. e. make them more oriented towards a future profession.

The scope (in terms of which disciplines are taught at which level) of PHE varies widely across Europe, as does its role and position within the overall education system.

This diversity creates a number of significant policy issues. Indeed the recognition of equivalent qualifications by employers is hampered by the fact that they are issued by different types of institutions. This is especially true in a cross-border context, where the status of a PHE institution in another country may not translate easily into the local situation.

Moreover, a lack of a common definition for PHE means that it cannot be analysed transnationally as a sector, and this leads to a discrepancy compared to traditional universities.

Finally, peer-learning and best-practice sharing on what PHE entails, are sporadic due to the same lack of uniform definitions in the different countries.

Still from the current examples in practice a number of similarities or common features can be implied. Thus, PHE tends to specialise in qualifications which provide direct access to the labour market. It also puts a stronger emphasis on competence development, being a mixture of knowledge, skills and attitudes. In its relation to the outside world, it has often developed strong links with external stakeholders at several levels of governance and teaching provision.

## 5 Impressions confirmed by recent research findings

In a firm belief that expansion of PHE needs to be a key element in the further growth of the knowledge society in Europe, EURASHE<sup>1</sup> in cooperation with a consortium of national councils of HEIs, and stakeholders in higher education, success-

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1 European Association of Institutions in Higher Education, a not-for profit association according to Belgian Law, founded in 1994 ([www.eurashe.eu](http://www.eurashe.eu)).

fully submitted an EU-funded project to improve the comparability of PHE systems across Europe, and put into place tools that will increase the effects of transnational policy actions.

The HAPHE project ('Harmonising Professional Higher Education in Europe')<sup>2</sup> has the following objectives: attempt to harmonise approaches to PHE in Europe, strengthen PHE as a sector, enhance the quality and importance of PHE, improve the roles of the different players in PHE, consider the links education/labour market/research and innovation and identify policy actions. The project started in October 2012 and in its first phase has concentrated on data gathering. This has allowed some preliminary findings to emerge: the importance of PHE in the market is considered to be high but the offerings are not adequate nor is the relationship between HEIs and employers.

Apart from the above findings, which will need to be further evidenced in the subsequent steps of the project, initial research has made it possible to earmark some common features and also to get a clearer picture of the occurrence and spread of PHE in Europe.

In a next phase of the project, we will investigate how PHE is officially defined in a number of European countries, linking this to its place in the national qualifications framework, its research and third mission coverage<sup>3</sup>, governance, funding mechanisms, recognition issues, etc.

Conclusions at this stage are therefore bound to be incomplete and premature but they will help us further steer our research and also to enlarge our scope and ambitions with this survey.

While it may be too early to draw major conclusions from the HAPHE project, it is interesting to compare this (preliminary) state of the art of PHE with the findings of another project focusing on the same target group, EDUPROF (Scholtes 2011), which in 2011 made a study on how the UAS type of HEIs deal with research and services in 18 PHE institutions, in comparable countries as the HAPHE project.<sup>4</sup>

This is an important issue in the discussion on the profile of PHE, as we can already see that a main differentiation with traditional universities is indeed the way they claim to conduct research, and also the contextual environment of this research.

The Frascati Manual, published by the OECD (2002) has set definitions of research that distinguish three main types ('levels') of research, namely *Basic research*, *Applied research*, and *Experimental development*. Only the first two are the main focus in scien-

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2 The project has ten partners (Belgium-Flanders, Croatia, Czech Republic, Estonia, France, Germany, Ireland, Malta, Poland, Portugal), of which six are national PHE rectors' conferences (BE-FL, CZ, FR, HR, IRL, PT) but the research has focused on other European countries as well. [www.eurashe.eu/haphe](http://www.eurashe.eu/haphe)

3 It is generally understood that the mission of any HEI is threefold: teaching, research (in varying forms), and service to the community.

4 Participating institutions were from Austria, Belgium (Flanders), Denmark, Estonia, Finland, Ireland, Lithuania, the Netherlands, Portugal and Switzerland.

tific publications, but it is the latter that makes best apparent the close relationship between PHE institutions and its stakeholders, mainly through research but also through (other) services to the community.

The main objective of the EDUPROF project was to develop and pilot test a list of indicators of applied research, checking the ‘feasibility’ of such indicators, and the potential for institutions to benchmark among each other. As such it builds upon similar, more ground-breaking initiatives initiated and financed by the European Commission, namely the U-Multirank<sup>5</sup> and U-Map projects<sup>6</sup> (van Vught et al. 2010).

The importance of this small-scale project is that it demonstrated through these indicators the specific role of a type of PHE institutions, commonly known as UAS, in areas like regional development and knowledge creation.

## 6 Discussions involving the sector of PHE

The same conclusion about the specific role of the wide range of PHE institutions in what many call the knowledge triangle was confirmed at the latest conference of EURASHE held in Split, May 2013, which was attended by a broad range of members of EURASHE and stakeholders of (professional) higher education. It was an event co-organised with the Universities of Applied Sciences Network<sup>7</sup>, which also forms part of our membership. For the purpose of this conference, *education, innovation and employability* were linked in a triangle implying another priority of PHE, namely delivering directly employable graduates. The theme of the conference (‘Higher Education – Making the Knowledge Triangle Work’) led us to a reflection on the nature and profile of PHE, and it was also the venue for a presentation of and discussion on the main results of the above HAPHE project.

The conclusions from the conference therefore contain useful input for the discussion on the present status and role of PHE (Thorn 2013).

Vladimír Šucha, Deputy Director General of the European Commission’s Joint Research Centre (JRC) in his keynote address ‘Public engagement as integral part of the innovation ecosystem,’ argued that “the disenchantment of young people with science and technology and lack of public interest in science meant that an important component of the innovation process – public acceptance of the products of innovation – made the task of innovation much harder” (Thorn 2013, p. 8).

In his opinion the ‘democratisation’ of the innovation process by the use of Web 2.0 technologies holds a strong potential for the reengagement of society with science and technology, which contrasts with the Horizon 2020 programme approach, wide-

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5 [www.u-multirank.eu](http://www.u-multirank.eu)

6 [www.u-map.eu](http://www.u-map.eu)

7 Universities of Applied Sciences Network (UASnet) ([www.uasnet.eu](http://www.uasnet.eu))

ly perceived to focus towards 'big' science from global brand HEIs and large companies. It is precisely "this connivance between PHE (per se, UAS) and SMEs and by extension all that contributes to regional development [that] may be crucial in optimising the full development of the knowledge triangle" (Thorn 2013, p. 8).

The crucial question which was put then, was that if we want to ensure that this version of the knowledge triangle contributes to economic development, what is the specific role of HEIs with a 'professional' orientation or profile?

This issue was also dealt with in the same conference by Frank Ziegele, who emphasised that "traditional dual differentiation of HEIs into universities and UAS and other professionally-oriented HEIs was not a sufficient concept to capture all the diversity exhibited amongst HEIs" (Thorn 2013, p. 10).

The vocational drift in what were earlier exclusively research universities, and the emergence of new types of universities, closer to business and people's daily occupations, such as 'university of the information age,' 'last chance university,' 'online university,' are a challenge to the higher education market traditionally occupied by PHE. It particularly raises questions as to how the individual institutions should respond.

Ulf-Daniel Ehlers, of the Baden-Wurtemberg Cooperative State University, a dual university with a strong component of work-based learning, argued that "shifts from 'know-that' to 'know-how' to 'knowing-in-action' approaches to education are a feature of PHE that allow graduates to develop competences that enable them to act in open, complex and uncertain futures" (Thorn 2013, p. 10).

According to Ellen Hazelkorn, the changing role of higher education in society coincided with the changing idea of the university and new models of higher education delivery (Thorn 2013, p. 13).

Therefore she presented a "topology of HEIs for the 21<sup>st</sup> century that depended on where they positioned themselves on the education, research and innovation/engagement triangle; 'traditional universities' emphasising research and education, specialist research institutes focusing on the research/innovation dimension and vocational institutions emphasising the education/engagement dimension".

The question of what is the present provision of PHE, and how do they compare in the different European countries, still stands. It is at the same time a question concerning the status (and *future* provision) of PHE.

It looks as if, with the emergence of new providers and new types of delivery, PHE institutions will have to reinvent themselves in what they offer, and the way programmes are developed and delivered.



## 7 Conclusion

PHE is characterised by the fact that its education and certainly its study programmes are shaped by specific professional goals or needs, in which the contexts of the future professions are clear and the learning outcomes are defined by the professional needs, in terms of integrated competences.

PHE may play an important role as an intermediary between higher education, vocational education and training and the labour market. In particular, PHE institutions are – in a way – “bilingual”; they speak both the academic and professional language, and can thus be key players in the process of a better understanding between higher education and the world of work.

To attain this aim, it is important to elaborate multidimensional characteristics of PHE with adequate indicators of good practice or even excellence, and to make a comparative review of existing higher education structures in European countries, identifying also problems and weak points of present systems.

## 8 Appendix

The following is an attempt to an overview of the place and profile of PHE in the system of higher education in a number of countries which were and are the focus in the two above described projects, EDUPROF and HAPHE.

The countries are Belgium (Flanders), Croatia, Czech Republic, Denmark, Estonia, Finland, Ireland, Lithuania, the Netherlands, Norway, Portugal.

This succinct overview pays attention to the occurrence of professional or vocational higher education in the above countries, but it is in no way an attempt to fully describe the complexity of the higher education system in the selected countries.

In most cases we describe PHE in a binary higher education system, of long occurrence or as an option envisaged for the future. The explanation for this is that they are easier to describe as being distinct from the academic programmes, although often the higher education landscape in these countries as well is in a constant flux.

The information is based on the different country profiles provided in the two projects referred to in this article, namely the HAPHE and EDUPROF projects. The author of this article can therefore not be held responsible for any omissions or inaccuracies.

### Belgium-Flanders

Flanders has two types of HEIs, traditional **Universities** (5), which offer academic bachelor's and master's programmes, and 21 **University Colleges** (*hogescholen*), offering professional bachelor's programmes and presently also academic bachelor's and

master's programmes. The latter can only be organised if the university college is 'associated' with a university. There are five associations, each consisting of one university and one to eleven university colleges.

Flemish higher education will change drastically in October 2013, when an integration process involving most of the 'university colleges' will be finalised, resulting in all academic programmes being transferred to a university, except for the academic arts programmes ('Schools of Arts' in future) and nautical programmes. The latter two programmes remain in the university colleges, whereas all former 'academically oriented' programmes will have been integrated in the universities. This means the binary system of higher education will remain in Flanders, and the professional profile will become clearer, though there will still be a few 'academic programmes' (in arts mainly) left in a number of institutions. The number of university colleges will further decrease in the near future as a result of planned mergers.

Both university and university college graduates carry the titles BA or BSc, MA or MSc. The majority of the professional bachelor graduates enter straight the labour market, though they can also follow a bridging programme to an academic master. Academic bachelors graduate from a university college or a university and mostly continue to an academic master. PhDs can only be awarded by traditional universities.

## Croatia

The Croatian higher education system makes a clear distinction between **Universities** (*sveučilište*) and PHE, which comprises the public **Polytechnics** (*veleučilišta*) and the (private) **Schools of professional higher education** (*visoke škole*), who both deliver professional study programmes, the first ones in several disciplines, whereas the latter tend to specialise in a particular field (e. g. management, finance, etc.).

The large Croatian universities have the particularity that they are composed of many independent "faculties" (Croatian *fakultet*, meaning college or department), which maintain their own administration, professional staff and campus. Thus, universities may have constituent HEIs which are legal entities and are called faculties (*fakulteti*) or art academies (*umjetničke akademije*).

Whereas universities are at this stage allowed to offer both academic and professional programmes, the different PHE institutions may only organise professional studies. The further aim is to establish an independent system of professional study programmes inside the official binary system of higher education in Croatia.

There is a clear difference between the graduates' profile from university and professional study programmes, in that the former programmes lead to employment in the chosen disciplines, including those requiring professional knowledge at the appropriate level, and the latter programmes provide students with an appropriate level of knowledge, skills and competences to work in applied professions, and to start working immediately after graduation.

## Czech Republic

In the Czech Republic there are two types of institutions providing higher education: **Higher Education Institutions** (*vysoké školy*) (ISCED 5a; EQF 6 – 8, provide first, second and third cycle programmes); and **Tertiary professional schools** (*vyšší odborné školy*) (ISCED 5b; EQF 6, provide sub-degree programmes).

HEIs are public, state and private. Under the Higher Education Act (1998) they are classified as **university type** (24 public, two state and three private) which offer study programmes at all three levels of higher education and **non-university type** (two public and 43 private) which offer mainly bachelor's programmes but may also provide master's programmes.

Tertiary professional schools (public, state, private or denominational) have study programmes that usually include both a theoretical and practical part.

Tertiary professional education (*vyšší odborné vzdělávání*) develops and deepens the knowledge and skills gained within secondary education, provides theoretical and professional education as well as practical experience for qualified professions.

There is a formal distinction between degrees awarded by HEIs (*vysoké školy*) and tertiary professional schools (*vyšší odborné školy*). Only the former have the right to award bachelor, master and doctoral degrees. Graduates in tertiary professional education obtain a graduation certificate, a diploma and the non-academic title Diploma Specialist (DiS) (*diplomovaný specialista*).

There is no formal differentiation among the higher education programmes within the legislation, but different profiles of higher education programmes including professional ones are being prepared in a new decree.

## Denmark

The Danish higher education has three constituents: **Universities** (*Universitet*) (five years) offering all three cycles programmes in all academic disciplines; **University Colleges** (*Professionshøjskole*) (3.5 or four years) offering professionally-oriented first cycle degree programmes in a number of disciplines (teacher training, social work, health care, etc.); and **Academies of Professional Higher Education** (*Erhvervsakademi*) (two years) offering AP Degrees – Academy Profession Degree programmes (level 5 according to EQF), in Business Studies, Technology & IT. The latter typically have four semesters and a three semester top-up to bachelor available in many cases.

HEIs are normally under the auspices of the Ministry of Science, Innovation and Higher Education, which has recently (Oct. 2011) taken over responsibility for a number of HEIs that previously were under the responsibility of other ministries. This is the case for higher education at the professional bachelor's degree level, including higher education for adults pursuing open education.

Denmark has eight universities, which provide academic higher education programmes, seven university colleges, which offer professional bachelor and AP pro-

grammes and nine Academies of Professional Higher Education, offering professionally-oriented short-cycle degree programmes.

### Estonia

The Estonian higher education system has two branches of study (sectors): academic and PHE.

Academic bachelor, master and doctoral studies are provided at **Universities**. PHE is provided in **institutions of PHE** or **University Colleges**. Two vocational schools also offer PHE programmes.

**Universities** provide academic bachelor, master and doctoral programmes, but may also offer PHE programmes. **PHE institutions** and some vocational education institutions may only offer PHE, generally on bachelor's level, but some master's programmes may be provided in co-operation with a university.

PHE is at the bachelor's level only, and ensures access to master's study. The standard period of study in PHE is three to four years. A person who has completed PHE is awarded a 'diploma'. Completion of respective studies in each cycle of higher education is considered as graduation from a specific educational institution.

### Finland

In Finnish higher education the sectors of **Polytechnics** and **Universities** are considered as complementary, and governed by separate Acts and Decrees regulating the administrative and educational responsibilities of the two types of HEIs.

Under the new Universities Act (2013) the autonomy of universities is further extended by giving them an independent legal personality, either as public corporations or as foundations under private law.

The mission of **universities** is to conduct scientific research and provide instruction and postgraduate education based on it. **Polytechnics** train professionals in response to labour market needs and conduct R&D which supports instruction and promotes regional development in particular. Polytechnics are multi-field regional institutions focusing on contacts with working life and on regional development.

Programmes and degrees: Depending on the awarding institution there are two profiles for first and second cycle studies: a *general academic* profile and a *practical* profile. They differ in learning outcomes, staffing and curricular requirements.

Universities confer bachelor's and master's degrees, and postgraduate licentiate and doctoral degrees. Polytechnics, which are now also called UAS, offer higher education qualifications and practical professional skills, at bachelor's (from 3.5 up to four years) and master's level (one to 1.5 years). A student is eligible for polytechnic/UAS master's level studies after accomplishing a bachelor's degree, and having at least three years of relevant work experience after that.

## Ireland

The Higher Education Authority (HEA) is the statutory planning and development body for higher education and research in Ireland. The Irish Education system is best described as one of partnership between the State and various private agencies and organisations. The Department of Education and Skills (DES) is responsible for the overall administration of education at all levels.

Higher education in Ireland is provided mainly by seven **Universities**,<sup>14</sup> **Institutes of Technology**, including the **Dublin Institute of Technology** and seven (public) **Colleges of Education**. There are also a number of private colleges of higher education, which provide roughly the same types of programmes as the public ones.

The ‘non-university’ sector includes a network of **Institutes of Technology** that apply more technical curricula and engage in applied research. They also provide short and sandwich courses and are operated more directly under state control.

In February 2012 a ‘National Strategy for Higher Education’ was launched. It aims at engaging higher education providers in a reflection on the future. One of the elements involved will be the creation of **Technological Universities**.

Ireland has the following degree types: Certificate, EQF 5; Bachelor’s, EQF 6; Master’s, EQF 7; and the Doctor’s degree. Institutes of Technology and some specialised colleges offer two-year Certificate programmes in applied science fields.

Bachelor’s degrees may also be a professional qualification (Professional Degree). The bachelor’s degree may be awarded as a General Degree, an Honours Degree and a BA (Special) Degree.

There are two types of master’s degrees in Ireland. They can be either based on course work ‘Taught Masters’ or on research ‘Research Masters.’ A master’s programme lasts one to two years and usually involves course work and a thesis. In the case of research master, students are generally examined solely on their research thesis. Taught master may also include examination on relevant subjects. In the case of research-based master, there are opportunities for students to continue on to a PhD qualification.

Master’s programmes are delivered for all disciplines across the higher education sector. Holders of a master’s degree, either by course work or research, can progress to doctoral studies. There is no provision for a professional doctorate, and not all Institutes of Technology are accredited for doctoral programmes.

## Lithuania

In Lithuania both institutions of university and ‘non-university level’ higher education are placed under authority of the Higher Education Department at the Ministry of Education and Science. Whereas the State grants **Universities** considerable autonomy, **Higher vocational schools or colleges (UAS)** are directly responsible to the central authorities.

There are two types of study programmes conferring degrees: university and college study programmes. The study programme offered in colleges is professionally-oriented.

Degrees in the first cycle – professional bachelor's degree and (academic) bachelor's degree – usually take four years. Professional bachelor's study programmes may be delivered by colleges, whereas the first cycle bachelor's programmes are offered by universities only. Both the bachelor's degree and the professional bachelor's degree may be obtained in a respective study field or supplemented with a professional qualification.

Degrees of the second cycle – master's degree – may only be awarded by universities, and usually take two years. A university degree conferring study programmes can also be integrated, combining the first and second cycles of studies.

Degrees of the third cycle – Doctoral degree may be obtained at universities or universities in conjunction with research institutes; studies in science and arts.

Non-degree study programmes are carried out at both universities and colleges. They are intended for retraining, preparation for an independent practical activity or for acquiring specialist qualifications in e.g. medicine, dentistry, veterinary, pedagogy, etc.

### (The) Netherlands

The Netherlands has a binary system of higher education, but one Higher Education and Research Act (1993) provides a single statutory framework for university education, higher professional education and the Open University.

Academic degree courses are provided at 14 **Universities**, including the Open University. Three universities specialise in engineering and technology courses, and there is one renowned private University, the Nyenrode Business University.

PHE ('HBO' in Dutch) is provided at **Institutions of higher professional education** (*hogescholen* or **UAS**), which offer courses in various applied subjects.

The average size of 'HBO' institutions is constantly increasing as a result not only of mergers but also of rising student numbers. There are 36 government-funded higher professional education institutions.

Both universities and '*hogescholen*,' offer bachelor's and master's degrees. The latter are subject to restrictions for the '*hogescholen*' (professional masters, in most cases not state-subsidised). Doctorates are awarded by universities only.

Postgraduate vocational courses (not state-subsidised) are offered by both universities and PHE institutions.

New legislation is in preparation (September 2013) that will allow '*hogescholen*' to offer the so-called Associate Degree (AD), which are short-cycle courses (EQF level 5).

## Norway

Norway has officially a unitary system of higher education, and the Ministry of Education and Research is responsible for all HEIs, with the exception of those of the military and police sectors.

There are **Universities** (so far public institutions only, eight universities), specialised university institutions (both public and private), **University Colleges** (both public and private) and two public university colleges of arts.

Tertiary education also includes vocational colleges (ISCED 4) and practical courses of training with duration half a year to two years as alternatives to higher education.

The degree system comprises three-year bachelor's degrees, two-year master's degrees and three-year Ph.D. degrees. There are some integrated five to five and half year programmes leading directly to master's degrees (or second cycle degree where the title of the former degree system has been kept) and some professional study programmes that last six years. In addition, there are some master's programmes of less than two years duration.

Additionally there is a two-year degree (*høgskolekandidat*) offered by some university colleges. This degree may be built upon to obtain a bachelor's degree. As opposed to the situation in many countries, the degree '*høgskolekandidat*' is offered at ordinary HEIs, i. e. short-cycle higher education is not offered at separate institutions.

## Portugal

The Portuguese higher education system comprises public and private education and is organised according to a binary system, with **Universities** and **Polytechnics**. Study cycles in the university subsystem focus mainly on scientific knowledge, while polytechnic education stresses vocational skills and advanced technical training, making it, therefore, more professionally oriented. Despite this binary division of the Portuguese higher education system, the Portuguese legal framework allows for the integration of polytechnics in universities, albeit exceptionally.

Unlike polytechnics, universities can award PhD degrees (EQF Level 8), alongside '*licenciatura*' (EQF Level 6) and master (EQF Level 7) degrees and play a crucial role in the field of research. The nature of the training provided also sets the difference between university and polytechnic higher education. The university system favours more of a conceptual approach, less oriented towards professional activities, as opposed to the technical approach in polytechnic institutes. Finally, in the university system, through the master courses, the student obtains an academic specialisation based on research and innovation activities or the development of professional skills.

Polytechnic institutions provide training oriented towards professional life. These institutions concentrate their efforts in the creation, transmission and dissemination of culture and professional expertise, as well as in the development of applied research. Therefore, the educational offer in the polytechnic higher education subsystem encompasses the following areas: technologies, tourism, health, education, agri-

culture, sports and performing arts. The network of polytechnic HEIs comprises 15 **polytechnic institutes**<sup>8</sup>, five **non-integrated schools** and seven **universities**, which, as explained before, can sometimes integrate polytechnic education schools.

With regard to academic degrees, polytechnic institutions can award the ‘*licenciado*’ (EQF Level 6) and master’s (EQF Level 7) degrees and are not allowed to award the PhD degree. Polytechnic master’s degrees should certify that the specialisation obtained is of a professional nature. Polytechnic institutions also provide other types of training, such as post-graduate studies and technological specialisation courses (CET) – EQF Level 4 – which are, for the most part, held in polytechnic institutions, given their technical, practical and vocational nature.

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<sup>8</sup> A polytechnic institute integrates two or more schools of different domains.



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### **Denmark**

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## Portugal

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